

=> fil wpix

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MOST RECENT UPDATE: 201018 <201018/DW>

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>>> FOR THE LATEST DERWENT WORLD PATENTS INDEX (DWPI)

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>>> HELP for European Patent Classifications see HELP ECLA, HELP ICO <<<

>>> Japanese FI-TERM thesaurus in field /FCL added <<<

>>> New display format ALLSTR available - see NEWS <<<

=> d que 129

L7 QUE SPE=ON ABB=ON PLU=ON COAT?

L11 QUE SPE=ON ABB=ON PLU=ON FLUOROALKYLSILANE? OR PERFLU
OROALKYLSILANE? OR (((PERFLUORO OR FLUORO) (A)ALKYL) OR PE
RFLUOROALKYL OR FLUOROALKYL) (2A)SILANE?

L14 QUE SPE=ON ABB=ON PLU=ON FLUOROSILANE? OR PERFLUOROSI
LANE?

L17 966 SEA FILE=WPIX SPE=ON ABB=ON PLU=ON L11 OR L14

L18 86 SEA FILE=WPIX SPE=ON ABB=ON PLU=ON (BIS(3A)TRIETHOXYSI
LYL) (2A)ETHANE OR ETHYLENEBIS(A)TRIETHOXYLSILANE OR
BISTRIETHOXYLSILETHANE OR ETHYLENEBISTRIETHOXYLSILANE

L19 1 SEA FILE=WPIX SPE=ON ABB=ON PLU=ON L17 AND L18

L20 1491 SEA FILE=WPIX SPE=ON ABB=ON PLU=ON C09D0183-08/IPC

L21 76 SEA FILE=WPIX SPE=ON ABB=ON PLU=ON L20 AND L17

L22 3 SEA FILE=WPIX SPE=ON ABB=ON PLU=ON L20 AND L18

L23 68 SEA FILE=WPIX SPE=ON ABB=ON PLU=ON L21 AND L7

L24 2 SEA FILE=WPIX SPE=ON ABB=ON PLU=ON L22 AND L7

L25 QUE SPE=ON ABB=ON PLU=ON METAL?

L26 35 SEA FILE=WPIX SPE=ON ABB=ON PLU=ON L23 AND L25

L27 QUE SPE=ON ABB=ON PLU=ON ?SILOXANE?

L28 14 SEA FILE=WPIX SPE=ON ABB=ON PLU=ON L26 AND L27

L29 12 SEA FILE=WPIX SPE=ON ABB=ON PLU=ON (L19 OR L22 OR L24
OR L28) AND (PY<=2003 OR PRY<=2003 OR AY<=2003)

=> d 129 ifull 1-12

L29 ANSWER 1 OF 12 WPIX COPYRIGHT 2010 THOMSON REUTERS on STN

ACCESSION NUMBER: 2005-203325 [22] WPIX

CROSS REFERENCE: 2004-654215

TITLE: Metal (pre)treatment, used for wire,
strip, sheet or part, including tube, profile or
small part, uses aqueous composition containing

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10/534,560

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water-soluble, hydrolysable or/and (partly)
hydrolyzed fluorine-free silane and
fluorosilane compounds

DERWENT CLASS: A18; A28; A82; G02; M13; M14; P42; P73
INVENTOR: BROWN K; DOMES H; JUNG C; KOLBERG T; SCHNEIDER J;
SCHOENE A; SCHONE A; WALTER M; KLIEHM N
PATENT ASSIGNEE: (DOME-I) DOMES H; (SCHN-I) SCHNEIDER J; (SCHO-I)
SCHONE A; (WALT-I) WALTER M; (CMTL-C) CHEMETALL
GMBH
COUNTRY COUNT: 6

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
DE 10332744	A1	20050203	(200522)*	DE	12[0]	
AU 2004215240	A1	20040910	(200611)	EN		
AU 2004215696	A1	20040910	(200611)	EN		
MX 2005009075	A1	20051101	(200625)	ES		
MX 2005009076	A1	20051101	(200625)	ES		
US 20060099429	A1	20060511	(200633)	EN		
JP 2006519307	W	20060824	(200656)	JA	45	
JP 2006519308	W	20060824	(200656)	JA	56	
JP 2006519924	W	20060831	(200657)	JA	39	
US 20060193988	A1	20060831	(200657)	EN		
CN 1777699	A	20060524	(200663)	ZH		
CN 1777700	A	20060524	(200663)	ZH		
CN 1798813	A	20060705	(200675)	ZH		
AU 2004215240	B2	20100204	(201016)	EN		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
DE 10332744 A1		DE 2003-10332744	
20030717			
AU 2004215240 A1		AU 2004-215240	20040225
AU 2004215696 A1		AU 2004-215696	20040225
CN 1798813 A		CN 2004-80010755	20040225
CN 1777699 A		CN 2004-80010925	20040225
CN 1777700 A		CN 2004-80010931	20040225
MX 2005009075 A1		WO 2004-EP1829	20040225
MX 2005009076 A1		WO 2004-EP1828	20040225
US 20060099429 A1		WO 2004-EP1829	20040225
JP 2006519307 W		WO 2004-EP1828	20040225
JP 2006519308 W		WO 2004-EP1829	20040225
JP 2006519924 W		WO 2004-EP1830	20040225
US 20060193988 A1		WO 2004-EP1830	20040225
MX 2005009075 A1		MX 2005-9075	20050825
MX 2005009076 A1		MX 2005-9076	20050825
US 20060099429 A1		US 2005-546582	20051101
US 20060193988 A1		US 2005-546624	20051101
JP 2006519307 W		JP 2006-501942	20040225
JP 2006519308 W		JP 2006-501943	20040225
JP 2006519924 W		JP 2006-501944	20040225
AU 2004215240 B2		AU 2004-215240	20040225

FILING DETAILS:

PATENT NO	KIND	PATENT NO
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AU 2004215696	A1	Based on	WO 2004076568	A
MX 2005009075	A1	Based on	WO 2004076568	A
JP 2006519308	W	Based on	WO 2004076568	A
AU 2004215240	A1	Based on	WO 2004076717	A
MX 2005009076	A1	Based on	WO 2004076717	A
JP 2006519307	W	Based on	WO 2004076717	A
JP 2006519924	W	Based on	WO 2004076718	A
AU 2004215240	B2	Based on	WO 2004076717	A

PRIORITY APPLN. INFO: DE 2003-10332744 20030717
 DE 2003-10308237 20030225

INT. PATENT CLASSIF.:

MAIN: C09D005-08; C23C022-62
 SECONDARY: C23C022-60
 IPC ORIGINAL: B05D0003-02 [I,A]; B05D0003-02 [I,A]; B05D0003-02 [I,C]; B05D0007-14 [I,A]; B05D0007-14 [I,C]; B05D0007-24 [I,A]; B05D0007-24 [I,C]; B32B0009-04 [I,A]; C08G0077-00 [I,C]; C08G0077-04 [I,A]; C09D0123-00 [I,C]; C09D0123-04 [I,A]; C09D0125-00 [I,C]; C09D0125-06 [I,A]; C09D0125-08 [I,A]; C09D0125-10 [I,A]; C09D0129-00 [I,C]; C09D0129-04 [I,A]; C09D0131-00 [I,C]; C09D0131-04 [I,A]; C09D0133-06 [I,A]; C09D0133-06 [I,C]; C09D0161-00 [I,C]; C09D0161-10 [I,A]; C09D0161-20 [I,C]; C09D0161-24 [I,A]; C09D0161-28 [I,A]; C09D0163-00 [I,A]; C09D0163-00 [I,C]; C09D0167-00 [I,A]; C09D0167-00 [I,C]; C09D0169-00 [I,A]; C09D0169-00 [I,C]; C09D0175-04 [I,A]; C09D0175-04 [I,C]; C09D0179-00 [I,A]; C09D0179-00 [I,C]; C09D0183-04 [I,A]; C09D0183-04 [I,C]; C09D0183-06 [I,A]; C09D0183-06 [I,C]; C09D0183-07 [I,A]; C09D0183-07 [I,C]; C09D0183-08 [I,A]; C09D0183-08 [I,C]; C09D0191-00 [I,C]; C09D0191-06 [I,A]; C09D0201-02 [I,A]; C09D0201-02 [I,C]; C09D0005-00 [I,A]; C09D0005-00 [I,C]; C09D0005-02 [I,A]; C09D0005-02 [I,C]; C09D0005-08 [I,A]; C09D0005-08 [I,C]; C09D0005-14 [I,A]; C09D0005-14 [I,C]; C09D0007-12 [I,A]; C09D0007-12 [I,C]; C23C0022-00 [I,A]; C23C0022-00 [I,C]; C23C0022-05 [I,C]; C23C0022-50 [I,A]; C23C0022-53 [I,A]; C23C0022-60 [I,A]; C23C0022-62 [I,A]; C23C0022-68 [I,A]; C23C0022-73 [I,C]; C23C0022-77 [I,A]; C23C0022-82 [I,C]; C23C0022-83 [I,A]; C23C0026-00 [I,A]; C23C0026-00 [I,C]; C23C0026-00 [I,A]; C23C0026-00 [I,C]; C23C0028-00 [I,A]; C23C0028-00 [I,C]; C09D0004-00 [I,A]; C09D0004-00 [I,C]; C09D0005-08 [I,C]; C23C0022-05 [I,C]; C23C0022-50 [I,A]; C23C0022-68 [I,A]; C23C0022-73 [I,C]; C23C0022-74 [I,A]; C23C0022-82 [I,C]; C09D0005-08 [I,A]; C09D0005-08 [I,C]; C23C0022-05 [I,C]; C23C0022-50 [I,A]; C23C0022-53 [I,A]; C23C0022-60 [I,A]; C23C0022-68 [I,A]; C23C0022-73 [I,C]; C23C0022-74 [I,A]; C23C0022-82 [I,C]; C23C0022-83 [I,A]; C09D0004-00+C08G77/04; C09D0004-00+C08G77/26; C09D0005-08; C23C0022-50; C23C0022-53; C23C0022-60; C23C0022-68; C23C0022-74; C23C0022-83
 USCLASS NCLM: 427/387.000; 428/447.000

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NCLS: 106/287.100; 106/287.160; 106/287.270; 427/299.000;
427/372.200; 528/025.000

JAP. PATENT CLASSIF.:

MAIN/SEC.: B05D0007-14 101 Z; B05D0007-14 Z; B05D0007-24 302
Y; C09D0123-04; C09D0125-06; C09D0125-08;
C09D0125-10; C09D0129-04; C09D0131-04; C09D0133-06;
C09D0161-10; C09D0161-24; C09D0161-28; C09D0163-00;
C09D0167-00; C09D0169-00; C09D0175-04; C09D0179-00;
C09D0183-04; C09D0183-06; C09D0183-07; C09D0183-08;
C09D0191-06; C09D0201-02; C09D0005-00 D;
C09D0005-02; C09D0005-08; C09D0005-14; C09D0007-12;
C23C0022-00 Z; C23C0022-77; C23C0022-83;
C23C0026-00 A; C23C0028-00 A; C23C0028-00 Z

FTERM CLASSIF.:

4D075; 4J038; 4K026; 4K044; 4D075/AA01; 4K026/AA01;
4K026/AA02; 4K044/AA02; 4K044/AA06; 4K026/AA07;
4K026/AA08; 4K026/AA09; 4K026/AA11; 4K026/AA13;
4K026/AA22; 4D075/AA82; 4D075/AB01; 4K044/AB02;
4D075/AB52; 4D075/AC01; 4D075/AC11; 4D075/AC21;
4D075/AC47; 4D075/AC92; 4D075/AE15; 4K026/BA01;
4K026/BA03; 4K026/BA09; 4K044/BA10; 4K044/BA11;
4K044/BA21; 4J038/BA21.2; 4K044/BB01; 4K044/BB03;
4K026/BB04; 4K044/BB04; 4K026/BB06; 4K026/BB08;
4K044/BB11; 4D075/BB24.Z; 4D075/BB26.Z;
4D075/BB42.Z; 4D075/BB57.Z; 4D075/BB65.X;
4D075/BB92.Z; 4D075/BB93.Y; 4D075/BB93.Z;
4K044/BC02; 4K044/BC04; 4D075/CA09; 4K044/CA11;
4D075/CA13; 4K026/CA14; 4K044/CA16; 4K026/CA18;
4K026/CA20; 4D075/CA33; 4K026/CA37; 4K026/CA39;
4K026/CA41; 4K044/CA53; 4J038/CB02.1; 4J038/CC02.1;
4J038/CC03.1; 4J038/CC04.1; 4J038/CE02.1;
4J038/CE05.1; 4J038/CF02.1; 4J038/CG14.1;
4J038/CH00.1; 4J038/CK03.1; 4D075/DA01; 4K026/DA02;
4D075/DA03; 4K026/DA03; 4J038/DA04.1; 4D075/DA06;
4K026/DA06; 4K026/DA11; 4K026/DA13; 4J038/DA14.1;
4J038/DA16.1; 4J038/DB00.1; 4D075/DB01; 4D075/DB02;
4D075/DB05; 4D075/DB06; 4D075/DB07; 4D075/DC01;
4D075/DC02; 4D075/DC05; 4D075/DC08; 4D075/DC11;
4D075/DC12; 4D075/DC15; 4D075/DC18; 4D075/DC24;
4D075/DC38; 4D075/DC41; 4J038/DD00.1; 4J038/DE00.1;
4J038/DG00.1; 4J038/DJ01.1; 4J038/DL05.1;
4J038/DL08.1; 4J038/DL10.1; 4D075/EA06; 4D075/EA07;
4K026/EB02; 4D075/EB07; 4K026/EB07; 4D075/EB12;
4D075/EB13; 4D075/EB14; 4D075/EB16; 4D075/EB19;
4D075/EB22; 4D075/EB32; 4D075/EB33; 4D075/EB35;
4D075/EB38; 4D075/EB43; 4D075/EB47; 4D075/EB52;
4D075/EB55; 4D075/EB56; 4D075/EC01; 4D075/EC07;
4D075/EC08; 4D075/EC15; 4D075/EC30; 4D075/EC35;
4D075/EC53; 4D075/EC54; 4D075/EC60; 4J038/HA16.6;
4J038/HA18.6; 4J038/HA21.6; 4J038/HA37.6;
4J038/HA45.6; 4J038/JA19; 4J038/JA20; 4J038/JA27;
4J038/JB09; 4J038/JC32; 4J038/JC38; 4J038/KA05;
4J038/KA08; 4J038/MA08; 4J038/MA10; 4J038/NA03;
4J038/NA05; 4J038/PA07; 4J038/PB03; 4J038/PB05;
4J038/PB07; 4J038/PB08; 4J038/PC02

BASIC ABSTRACT:

DE 10332744 A1 UPAB: 20050708

NOVELTY - In (pre)treating ~~metal~~ surface with aqueous composition (I),
(almost) free from chromium(VI) compounds, (I) contains fluorine-free
silane(s) and ~~fluorosilane~~(s), which are hydrolysable or/and (partly)
hydrolyzed and are or become water-soluble before application. (I) is

contacted with the clean(ed), pickled or/and pretreated metal surface and resultant film is dried and optionally hardened, giving 0.001-10 micron thick film.

DETAILED DESCRIPTION - In coating a metal surface with an aqueous composition (I), optionally containing organic solvent and other components but largely or completely free from chromium(VI) compounds, for pretreatment before further coating or for treatment, (I) contains hydrolysable or/and (partly) hydrolyzed fluorine-free silane(s) (II) and hydrolysable or/and (partly) hydrolyzed fluorosilane(s) (III), which are water-soluble or especially become water-soluble by (further) hydrolysis or/and chemical reactions before application to the metal surface. (I) is contacted with the clean, pickled, cleaned or/and pretreated metal surface and forms a film on this, which is then dried and optionally hardened, giving a 0.001-10 micron thick film.

An INDEPENDENT CLAIM is also included for (I) for the cited purposes, in which the ratio of (II) to (III), including their reaction products, is 1:(0.01-4).

USE - The process is used for coating metal surfaces (claimed). The coated substrates are used as wire, strip, sheet or parts for wire winding, wire braiding, steel strip, sheet metal, cladding, screening, vehicle bodies or body parts; vehicle, trailer, motor caravan or aircraft parts; covers, housings, lamps, lights, traffic light elements, furniture (components), domestic appliance parts, shelves, profiles, moldings with complex geometry, crash barriers, heaters, fence elements, bumpers (all claimed). They are also used for parts consisting (partly) of tubes and/or profiles, window, door and cycle frames or small parts, e.g. screws, nuts, flanges, springs or spectacle frames (all claimed).

ADVANTAGE - Most existing methods for treatment of metal surfaces, especially strip, or pretreatment before lacquering are based on the use of chromium(VI) compounds (plus various additives) but the toxicological and ecological risks restrict their use. Aqueous compositions containing silanes are already used to produce siloxane-rich anticorrosion coatings but are sometimes difficult to use and do not always give optimum results. Using the present composition avoids the drawbacks of existing processes. It is suitable for high-speed coating of parts and strip, including on the large scale, and requires little or no chromium(VI) compound. Adding a relatively small amount of fluorosilane of the aqueous composition makes the coatings much more hydrophobic and corrosion-resistant without significantly impairing the water-solubility or stability of the composition. TECHNOLOGY FOCUS:

INORGANIC CHEMISTRY - Preferred Components: Preferred particulate inorganic compounds are finely-divided powders, dispersions or suspensions, e.g. a carbonate, oxide, silicate or sulfate, especially colloidal or/and amorphous particles. They preferably are based on aluminum, barium, cerium, calcium, lanthanum, silicon, titanium, yttrium, zinc or/and zirconium compound(s).

METALLURGY - Preferred Treatment: Aqueous composition (I) is applied by rolling, flooding, spreading, spraying, brushing or dipping and optionally squeezing with a roller. The coating is produced partly by drying and film formation or/and actinic radiation, cationic polymerization or/and thermal cure. Drying preferably is carried out with circulating air at 20-400degreesC. After the film has been dried and optionally cured, coating (s) of printing ink, film, lacquer, lacquer-like material, powder lacquer, adhesive or/and adhesive carrier may be applied. The coated metal parts, strips or sections of strip are shaped, lacquers, coated with polymers, e.g. PVC, printed, bonded, hot soldered, welded or/and joined with one another or other elements by clinching or other techniques.

ORGANIC CHEMISTRY - Preferred Silanes: Preferred fluorine (F)-free silanes (II) and fluorosilanes (III) are acyloxysilanes, alkoxysilanes, silanes with amino group(s), e.g.

aminoalkylsilanes, silanes with succinic acid or/and anhydride group(s), bis-silyl-silanes, silanes with epoxy group(s), e.g. glycidoxysilanes, (meth)acrylate-silanes, multi-silyl-silanes, ureidosilanes, vinylsilanes or/and silanols or/and (poly) siloxanes of chemical composition corresponding to these silanes. Preferred individual compounds (II) include (3-aminopropyl)silanetriol, 3-glycidoxypropyltriethoxysilane, 3-(triethoxysilyl)propylsuccinosilanes, aminoethylaminopropylmethyldiethoxysilane, beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane, bis(triethoxysilylpropyl)amine, gamma-aminopropyltriethoxysilane, N-(gamma-triethoxysilylpropyl)diethylene triamine, tris(3-(triethoxysilyl)propyl) isocyanurate and vinyltriacetoxysilane. The fluorosilanes (III) are especially fluoroalkoxyalkylsilanes, mono-, di- or trifunctional fluorosilanes, mono-, bis- or tris-fluorosilanes, fluorosilanes based on (m)ethoxysilane or/and fluorosilanes with functional group(s), e.g. an amino group, especially as cocondensate, e.g. a fluoroalkyldialkoxysilane, fluoroaminoalkylpropyltrialkoxysilane, fluoromethanesulfonate, fluoropropylalkyldialkoxysilane, triphenylfluorosilane, trialkoxyfluorosilane, trialkylfluorosilane or/and tridecafluorooctyltrialkoxysilane. In particular, (III) contains not less than 2 amino groups and not less than 1 ethyl or/and methyl group.

Preferred Chelates: The metal chelates are based on acetylacetonates, acetoacetic esters, acetates, alkylene-diamines, amines, lactates, carboxylic acids, citrates or/and glycols.

POLYMERS - Preferred Composition: Aqueous composition (I) contains metal chelate(s), oligomer(s) or/and (co)polymer(s). It may also contain particulate inorganic compound(s) with an average diameter of 0.005-0.3 μm , lubricant(s), organic corrosion inhibitor(s), corrosion-inhibiting pigment(s), agent(s) for neutralization or/and steric stabilization of the synthetic resin, organic solvent(s) and siloxane (s). (I) contains 0.1-980, preferably 2-600 g/l organic film former; 0.05-300 g/l (II) and 0.01-150 g/l (III), including their reaction products; 0.1-80 g/l metal chelate; and 0.01-5 weight% paraffin, polyethylene and polypropylene wax(es), especially oxidized wax(es), as lubricant. It may also contain biocide(s), antifoam(s) or/and wetting agent(s).

Preferred Components: The organic film former is a mixture of (co)polymer(s) based on acrylate, epoxide, ethylene, urea-formaldehyde, phenol, polyester, polyurethane, styrene, styrene-butadiene or/and vinyl resin, especially polyethylene-imine, polyvinyl alcohol, polyvinylphenol, polyvinylpyrrolidone or/and polyaspartic acid, more especially copolymers with a vinyl compound containing phosphorus. The acid groups of the synthetic resin are stabilized with ammonia, amines, e.g. morpholine, dimethylethanolamine, diethylethanolamine or triethanolamine or/and with alkali metal compounds, e.g. sodium hydroxide.

EXTENSION ABSTRACT:

EXAMPLE - The components used in aqueous compositions for treating metals were (II) fluorine-free silanes, comprising (IIA) an amino-functional trialkoxysilane, which was used after hydrolysis for only about 2 hours and (IIB) a bis-trialkoxysilane, used after hydrolysis and storage for about 3 days; and (IIIA) a water-soluble aminoalkyl-functional fluoroalkylalkoxysilane, used only after very long hydrolysis and storage.

These components and additives were used in aqueous concentrates and diluted with water to give treatment baths for ~~metal~~ treatment. All concentrates and baths were stable for over a week and were unchanged and free from precipitates. The baths contained (A, C, D) 0.46, (B) 0 g/l (IIA), (A) 0, (B, C, D) 0.95 g/l (IIB), (A, B, C) 0, (D) 0.5 g/l (IIIA), (A) 0.05, (B) 0.08, (C, D) 0.13 g/l glacial acetic acid and (A) 0.14, (B) 0.20, (C, D) 0.39 g/l ethanol; and had pH (A) 10.1, (B) 3.3, (C) 5.7, (D) 5.8, (A, B, C) being controls. These compositions were contacted with cold-rolled sheet (CRS) steel and hot galvanized sheet steel (HDG) by application with rollers and drying at 25degreesC, then the treated sheets were dried at 90degreesC. On CRS/HDG, the dried films, which were 0.02-0.12 mum thick, had an angle of contact with water of (A) 88/94, (B) 35/83, (C) 76/94, (D) 117/128degrees. The films were clear, uniform and compact and, except for (B), colorless on CRS. They caused little change in the structure, luster and color of the ~~metal~~ surface. The ratings for salt spray corrosion for some samples were (B) 5 after 1 hours, (D) less than 1 after 1 hour and less than 3 after 5 hours (scale 0-5, 5 being worst value).

FILE SEGMENT: CPI; GMPI
 MANUAL CODE: CPI: A12-B04B; G02-A05E; M13-B

L29 ANSWER 2 OF 12 WPIX COPYRIGHT 2010 THOMSON REUTERS on STN
 ACCESSION NUMBER: 2004-676968 [66] WPIX
 DOC. NO. CPI: C2004-241193 [66]
 DOC. NO. NON-CPI: N2004-536608 [66]
 TITLE: Coating liquid for forming wettable
 pattern, comprises titanium dioxide and
 polysiloxane comprising substituent having
 pseudo liquid directly bonded to silicon atom of
 polysiloxane, and has neutral pH
 DERWENT CLASS: A85; A89; G02; J04; L03; P42; P81; P84; S03; U11;
 U14; V04; X26
 INVENTOR: KOBAYASHI H
 PATENT ASSIGNEE: (NIPQ-C) DAINIPPON PRINTING CO LTD; (KOBAYASHI H
 KOBAYASHI H
 COUNTRY COUNT: 107

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 2004077159	A1	20040910	(200466)*	JA	42	[1]
JP 2004264422	A	20040924	(200466)	JA	24	
US 20040223926	A1	20041111	(200475)	EN		
KR 2004077540	A	20040904	(200506)	KO		
TW 2004020914	A	20041016	(200629)	ZH		
CN 1754126	A	20060329	(200649)	ZH		
US 20080124490	A1	20080529	(200838)	EN		
JP 4332360	B2	20090916	(200961)	JA	24	

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2004077159	A1	WO 2004-JP2392	20040227
JP 2004264422	A	JP 2003-53158	20030228
TW 2004020914	A	TW 2004-104216	20040220
US 20040223926	A1	US 2004-786790	20040225
US 20080124490	A1 Div Ex	US 2004-786790	20040225
CN 1754126	A	CN 2004-80005063	20040227
KR 2004077540	A	KR 2004-13428	20040227

US 20080124490 A1
JP 4332360 B2

US 2008-13556 20080114
JP 2003-53158 20030228

FILING DETAILS:

PATENT NO	KIND	PATENT NO
JP 4332360	B2 Previous Publ	JP 2004264422 A

PRIORITY APPLN. INFO: JP 2003-53158 20030228

INT. PATENT CLASSIF.:

MAIN: G02B0005-20; G03F0007-004
IPC ORIGINAL: B05D0007-24 [I,A]; B05D0007-24 [I,C];
C09D0183-08 [I,A]; C09D0183-08
[I,C]; C23C0014-14 [I,A]; C23C0014-14 [I,C];
G01N0033-52 [I,A]; G01N0033-52 [I,C]; G01N0037-00
[I,A]; G01N0037-00 [I,C]; G02B0001-10 [I,A];
G02B0001-10 [I,C]; G02B0003-00 [I,A]; G02B0003-00
[I,C]; G03F0007-004 [I,A]; G03F0007-004 [I,C];
H01L0051-50 [I,A]; H01L0051-50 [I,C]; H05B0033-10
[I,A]; H05B0033-10 [I,C]; H05B0033-14 [I,A];
H05B0033-14 [I,C]

IPC RECLASSIF.: C08K0003-00 [N,C]; C08K0003-22 [N,A]; C09D0183-04
[I,A]; C09D0183-04 [I,C]; C09D0183-08
[I,A]; C09D0183-08 [I,C]; G02B0001-10
[I,A]; G02B0001-10 [I,C]; G02B0003-00 [I,A];
G02B0003-00 [I,C]; G02B0005-20 [I,A]; G02B0005-20
[I,C]; G03F0007-00 [I,A]; G03F0007-00 [I,C];
G03F0007-004 [N,A]; G03F0007-004 [N,C];
G03F0007-075 [I,A]; G03F0007-075 [I,C]; H01L0051-50
[I,A]; H01L0051-50 [I,C]; H05B0033-10 [I,A];
H05B0033-10 [I,C]; H05K0003-12 [N,A]; H05K0003-12
[N,C]

ECLA: C09D0183-04+F; C09D0183-08+F; G03F0007-00B;
G03F0007-00B2; G03F0007-075M

ICO: M08K0003:22; S03F0007:004F; T05K0003:12

USCLASS NCLM: 424/063.000; 427/597.000

JAP. PATENT CLASSIF.:

MAIN/SEC.: G02B0001-10 Z; G02B0003-00 Z; G02B0005-20 101;
G03F0007-004 521; H05B0033-10; H05B0033-14 A

MAIN: G03F0007-004 521

SECONDARY: G02B0001-10 Z; G02B0003-00 Z; G02B0005-20 101;
H05B0033-10; H05B0033-14 A

FTERM CLASSIF.: 2H025; 2H048; 2H125; 2K009; 2K010; 3K007; 3K107;
3K107/AA01; 3K007/AB18; 3K107/BB01; 2H048/BB02;
2H048/BB08; 2H048/BB10; 2K009/CC03; 3K107/CC22;
3K107/CC35; 2K009/CC42; 3K107/CC45; 3K007/DB03;
2K009/DD02; 2K009/EE02; 3K007/FA01; 3K107/GG06;
3K107/GG08; 3K107/GG24; 3K107/GG35

BASIC ABSTRACT:

WO 2004077159 A1 UPAB: 20090923

NOVELTY - A coating liquid comprises titanium dioxide and polysiloxane comprising a substituent having pseudo liquid directly bonded to silicon atom of polysiloxane, and has a neutral pH value.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) manufacture of coating liquid, which involves mixing neutral titanium oxide-sol liquid containing alkyl silicate and titanium oxide, with fluoro alkyl silane hydrolysis liquid, after adjusting pH of hydrolysis liquid to 5-9;

(2) manufacture of pattern forming material, which involves applying the coating liquid on base material, radiating coated region and changing direction with respect to contact angle, drying or hardening to obtain wettability change layer, and irradiating wettability change layer and forming wettable pattern with lyophilic region; (3) manufacture of functional element, which involves forming functional portion on the wettable pattern of the pattern forming material;

(4) color filter comprising the functional element as pixel unit;

(5) microlens comprising the functional element as lens; (6) electroconductive pattern comprising the functional element as metal wiring;

(7) biochips base material comprising the functional element as biological material having adhesivity; (8) organic electroluminescent element comprising the functional element as organic electroluminescent layer; and (9) coating device used for applying coating liquid on base material. The coating device comprises a neutral titanium oxide-sol liquid storing unit for storing neutral titanium oxide-sol liquid, hydrolysis liquid storing unit for storing hydrolysis liquid, stirrer for mixing neutral titanium oxide-sol liquid and hydrolysis liquid, and application unit for applying coating liquid on base material.

USE - For forming wettable pattern used in manufacture of functional elements used by color filter, microlens, electroconductive pattern, biochips base material and organic electroluminescent element (all claimed).

ADVANTAGE - The coating liquid enables forming wettability change layer which does not contain acid and organic electroluminescent layer having easy color coding ability. DESCRIPTION OF DRAWINGS - The figure shows the process diagram of the manufacturing method of pattern forming material. TECHNOLOGY FOCUS:

POLYMERS - Preferred Composition: The coating liquid further contains alkyl silicate.

Preferred Substituent: The substituent having liquid repellency is fluoro alkyl group.

Preferred Compound: The polysiloxane is a hydrolysis condensate or cohydrolysis condensate of silicon compound of formula: $Y_nSiX(4-n)$.

Y = alkyl, fluoroalkyl, vinyl, amino, phenyl or epoxy;

X = alkoxyl or halogen; and

n = 0-3.

Preferred Process: The coating liquid is filtered before applying on the base material. The wettable pattern forming process involves forming a shading portion on the base material and then carrying out laser irradiation using a mask. The coating liquid is applied on the base material by spin coat method, slit coat method, bead coat method, spray coat method or dip coat method.

MECHANICAL ENGINEERING - Preferred Apparatus: The wettability change layer is dried in a hot plate, infrared heater or oven.

EXTENSION ABSTRACT:

EXAMPLE - STS-01 (acidic titanium oxide sol) and Methyl silicate 51 (acidic dispersion stabilizer) were added to Amberlite IRA-910 (anion exchange resin) and neutralized to ion exchange. Subsequently, after filtering the ion exchange resin methanol was added and neutral titanium oxide-sol liquid having 1% solid content and pH of 6.4 was obtained. Isopropyl alcohol (in g) (30), TSL8233 (fluoroalkyl silane) and TSL8114 (tetramethoxy silane) (3) and 0.05N hydrochloric acid (2.5) were stirred for 8 hours and diluted 100 times by isopropyl alcohol to obtain fluoro alkyl silane hydrolysis liquid. Neutral titanium oxide-sol liquid (50) and fluoroalkyl silane hydrolysis liquid (0.15) were mixed to obtain coating liquid composition having pH of 5.7. The coating liquid was applied on a glass substrate and a photocatalyst content layer of 0.15 μ m was obtained. The layer was exposed to high pressure mercury lamp for

30 seconds via a photomask and a pattern forming material consisting of wettability changing pattern was obtained.

FILE SEGMENT: CPI; GMPI; EPI
 MANUAL CODE: CPI: A06-A00E2; A12-E11; A12-L02A; A12-L03D;
 G02-A05; J04-B01; L03-G02; L03-G02B; L03-G02D;
 L03-G05; L03-G05F; L03-J; L04-C05; L04-C06
 EPI: S03-E14H; S03-E15; U11-A15B; U14-J01; V04-R02;
 X26-J

L29 ANSWER 3 OF 12 WPIX COPYRIGHT 2010 THOMSON REUTERS on STN
 ACCESSION NUMBER: 2004-451395 [43] WPIX
 DOC. NO. CPI: C2004-169202 [43]
 DOC. NO. NON-CPI: N2004-357202 [43]
 TITLE: Process for coating an object at least
 partially with metallic, e.g. copper or
 precious metals, application of
 polysiloxane coating by a sol-gel
 process useful for sanitary ware production
 A13; A26; A82; G02; P28; P42; P73; Q42; Q66
 INVENTOR: FATH A
 PATENT ASSIGNEE: (GROH-N) GROHE AG HANS; (FATH-I) FATH A
 COUNTRY COUNT: 106

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
DE 10253839	A1	20040527	(200443)*	DE	8[0]	
WO 2004044071	A2	20040527	(200443)	DE		
AU 2003301971	A1	20040603	(200470)	EN		
EP 1563016	A2	20050817	(200554)	DE		
BR 2003016357	A	20050927	(200565)	PT		
MX 2005005228	A1	20050901	(200617)	ES		
CN 1738873	A	20060222	(200643)	ZH		
US 20080063859	A1	20080313	(200820)	EN		
AU 2003301971	B2	20091001	(200965)	EN		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
DE 10253839 A1		DE 2002-10253839	
20021114			
AU 2003301971 A1		AU 2003-301971	
20031113			
BR 2003016357 A		BR 2003-16357 20031113	
CN 1738873 A		CN 2003-80108766	
20031113			
EP 1563016 A2		EP 2003-808276	
20031113			
WO 2004044071 A2		WO 2003-EP12697	
20031113			
EP 1563016 A2		WO 2003-EP12697	
20031113			
BR 2003016357 A		WO 2003-EP12697	
20031113			
MX 2005005228 A1		WO 2003-EP12697	
20031113			
US 20080063859 A1		WO 2003-EP12697	
20031113			

MX 2005005228 A1
 US 20080063859 A1
 AU 2003301971 B2
 20031113

MX 2005-5228 20050513
 US 2006-534560 20061222
 AU 2003-301971

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2003301971	A1	WO 2004044071 A
EP 1563016	A2	WO 2004044071 A
BR 2003016357	A	WO 2004044071 A
MX 2005005228	A1	WO 2004044071 A
AU 2003301971	B2	WO 2004044071 A

PRIORITY APPLN. INFO: DE 2002-10253839 20021114

INT. PATENT CLASSIF.:

IPC ORIGINAL: A47K0004-00 [I,A]; A47K0004-00 [I,C]; B05D0003-10 [I,A]; B05D0003-10 [I,C]; B32B0027-06 [I,A]; B32B0027-06 [I,C]; C08G0077-00 [I,C]; C08G0077-12 [I,A]; C09D0183-04 [I,A]; C09D0183-04 [I,C]; C09D0183-06 [I,A]; C09D0183-06 [I,C]; C09D0183-08 [I,A]; C09D0183-08 [I,C]; C09D0004-00 [I,A]; C09D0004-00 [I,C]; E03C0001-00 [I,A]; E03C0001-00 [I,C]
 IPC RECLASSIF.: C09D0004-00 [I,A]; C09D0004-00 [I,C]
 ECLA: C09D0004-00+C08G77/24
 USCLASS NCLM: 428/336.000
 NCLS: 427/327.000; 427/387.000; 428/447.000; 528/031.000

BASIC ABSTRACT:

DE 10253839 A1 UPAB: 20060121

NOVELTY - A process for coating an object especially sanitary ware at least partially with metallic, e.g. copper or precious metals, where optionally at least one pretreatment step is applied to activate the metal surface, an organosilane is applied to the metal surface by the so-called sol-gel process, and the coating obtained is converted to a polysiloxane coating is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for: (1) an object, preferably sanitary ware, obtainable as above;

(2) a composition for coating of objects comprising an organosilane mixture of at least one especially modified fluorosilanes, preferably from 1H, 1H, 2H, 2H-perfluorooctyl-triethoxysilane or from 1H,1H,2H, 2H-perfluorodecyl-triethoxysilane, and a (poly)-alkoxysilane, preferably 1,2-bis-triethoxysilylethane.

USE - The process is useful in sanitary ware production.

ADVANTAGE - The polysiloxane layer has high transparency, is easily cleaned, is water repellant, scratch and UV resistant, and has good corrosion resistance.

TECHNOLOGY FOCUS:

POLYMERS - Preferred Process:the coating is converted to a polysiloxane coating, thickness less than 5, preferably less than 1 micron, by heat treatment at less than 100degreesC, preferably below 70degreesC. Preferred Components: The polysiloxane layer thickness is less than 5, preferably less than 1 micron. An organosilane mixture, preferably from two organosilanes is applied to the metal surface, i.e. as an aqueous colloidal solution, especially of 1-30 weight% solids. The organosilane is an especially modified fluoroalkylsilane, preferably in aqueous solution. The silane is 1H, 1H, 2H, 2H-perfluorotriethoxysilane, or 1H, 1H, 2H, 2H-perfluorodecyltriethoxysilane. The organosilane is polyalkoxysilylalkane, preferably 1,2-

bistriethoxysilylethane. The organosiloxane mixture contains fluorocalkylsilane, preferably from 1H, 1H, 2H-perfluorooctyltriethoxy silane and 1H, 1H, 2H, 2H-perfluorodecyltriethoxysilane, and a polyalkoxysilylalkane, preferably 1,2-bis-triethoxysilylethane. The metallic surface is applied to a plastics, especially ABS base, or stainless steel, Al, Zn pressure casting or preferably brass. The metal surface is a Pd-Ni, Ni-W, or Cr surface. The metal surface is in copper, stainless steel, or a precious metal, preferably silver or gold. Before applying the organosilane a so-called metal primer is applied to the metal surface, i.e. a long chain omega-functionalized mercaptan, e.g. 11-mercapto-1-undecanol a primer from methylene-ethylene- and/or ethylene glycol units. The object is built up from a brass or plastics, especially ABS base, and at least one metal layer on this base, especially in Pd-Ni, Ni-W, or Cr, which is coated with the polysiloxane layer. The object is built up from a plastics, especially ABS base, a metal layer on the base in Cu, Ni, Pd-Ni, Ni-W, or Cr, a silver or gold layer on this layer, a primer layer on the silver or gold, and a primer layer on the silver or gold layer, preferably in a long chain omega-funtionalized mercaptan, and a polysiloxane layer on the primer layer. The object is built up from: a plastics, preferably ABS layer, a Ni layer on this layer, and a polysiloxane coating on the Ni layer. The object is built up from: a brass base layer, a Ni layer on this layer, and a polysiloxane coating on the Ni layer. The object is built up from: a plastics, preferably ABS layer, A Ni layer on this layer, a silver layer on the Ni layer, a primer layer on the silver layer, preferably a long chain omega-funtionalized mercaptan, and a polysiloxane layer on the primer layer. The object is built up from: a brass base layer, a Ni layer on this layer, a silver layer on the Ni layer, a primer on the silver layer, preferably long chain omega-funtionalized mercaptan, and a polysiloxane layer on the primer layer. The layer thickness of the polysiloxane coating is less than 5, especially less than 1 micron

EXTENSION ABSTRACT:

EXAMPLE - To coat a sanitary object, two bases, one in ABS and the other in brass were coated with Ni, divided into two groups, i.e. an-Ni coated ABS base and a Ni-coated brass base, both of these were coated with a 2 micron silver layer, immersed in 11-mercapto-1-undecanol for 24 hours, treated with desalinated water and ethanol, dried, and coated with organosilane, e.g. 1,2-bis-triethoxysilylethane, giving finally polysiloxane coated objects with easily cleaned, highly transparent, crack and corrosion resistant surfaces.

FILE SEGMENT: CPI; GMPI
MANUAL CODE: CPI: A06-A00E; A11-B05C; A12-R02; G02-A01A;
G02-A05E

L29 ANSWER 4 OF 12 WPIX COPYRIGHT 2010 THOMSON REUTERS on STN
ACCESSION NUMBER: 2003-148290 [14] WPIX
DOC. NO. CPI: C2003-038250 [14]
TITLE: Forming silicon containing layer chemically bound to siliceous substrate by coating part of face of substrate treated with biocide containing composition with silicon layer, and reacting with reactive composition
DERWENT CLASS: D22; E19; G02; L01; P34; P42
INVENTOR: SIREJACOB G

March 21, 2010

10/534,560

13

PATENT ASSIGNEE: (ICTC-N) ICT COATING NV; (ICTC-N) ICT COATINGS NV
COUNTRY COUNT: 99

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 2002088043	A1	20021107	(200314)*	EN	39[0]	
<--						
US 20030026907	A1	20030206	(200318)	EN		
<--						
US 6635305	B2	20031021	(200370)	EN		
<--						
EP 1381576	A1	20040121	(200410)	EN		
AU 2002257387	A1	20021111	(200433)	EN		
<--						
EP 1381576	B1	20050323	(200523)	EN		
DE 60203382	E	20050428	(200530)	DE		
DE 60203382	T2	20060420	(200628)	DE		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2002088043	A1	WO 2002-BE56	20020422
US 20030026907	A1	US 2001-843618	
20010426			
US 6635305	B2	US 2001-843618	
20010426			
AU 2002257387	A1	AU 2002-257387	
20020422			
DE 60203382	E	DE 2002-603382	
20020422			
EP 1381576	A1	EP 2002-727053	
20020422			
EP 1381576	B1	EP 2002-727053	
20020422			
DE 60203382	E	EP 2002-727053	
20020422			
EP 1381576	A1	WO 2002-BE56	20020422
EP 1381576	B1	WO 2002-BE56	20020422
DE 60203382	E	WO 2002-BE56	20020422
DE 60203382	T2	DE 2002-603382	
20020422			
DE 60203382	T2	EP 2002-727053	
20020422			
DE 60203382	T2	WO 2002-BE56	20020422

FILING DETAILS:

PATENT NO	KIND		PATENT NO	
DE 60203382	E	Based on	EP 1381576	A
EP 1381576	A1	Based on	WO 2002088043	A
AU 2002257387	A1	Based on	WO 2002088043	A
EP 1381576	B1	Based on	WO 2002088043	A
DE 60203382	E	Based on	WO 2002088043	A
DE 60203382	T2	Based on	EP 1381576	A
DE 60203382	T2	Based on	WO 2002088043	A

PRIORITY APPLN. INFO: US 2001-843618 20010426

INT. PATENT CLASSIF.:

MAIN: C03C017-30
IPC ORIGINAL: C03C0017-28 [I,C]; C03C0017-30 [I,A]; C03C0017-34 [I,A]; C03C0017-34 [I,C]; C09D0183-08 [I,A]; C09D0183-08 [I,C]; C09D0005-00 [I,A]; C09D0005-00 [I,C]; C09D0005-16 [I,A]; C09D0005-16 [I,C]
IPC RECLASSIF.: C03C0017-00 [I,A]; C03C0017-00 [I,C]; C03C0017-28 [I,C]; C03C0017-30 [I,A]; C03C0017-34 [I,A]; C03C0017-34 [I,C]
ECLA: C03C0017-00D4B; C03C0017-30; C03C0017-34B
ICO: M03C0204:02
USCLASS NCLM: 427/344.000
BASIC ABSTRACT:

WO 2002088043 A1 UPAB: 20060118

NOVELTY - Increasing the chemical bounds of the silicon layer with the substrate and the layer by making a preliminary treatment before applying the reactive composition for forming the silicon containing layer bound to the siliceous substrate.

DETAILED DESCRIPTION - A silicon containing layer chemically bound to a siliceous substrate is formed by coating a portion of face of the siliceous substrate treated with biocide containing composition with silicon layer before reacting it with a reactive composition.

USE - For coating at least a portion of a face of a siliceous substrate with a silicon containing layer.

ADVANTAGE - The inventive method allows drastic increase of chemical bounds of the silicon layer to the substrate, as well as silicon bounds within the layer.

TECHNOLOGY FOCUS:

IMAGING AND COMMUNICATION - Preferred Method: The portion treated with a biocide containing composition is at least partly dried before being contacted with the reactive composition; and at least partly treated with a mechanism for removing water present on the portion. The water removal is carried out by a washing with an organic solvent.

The drying is at least carried out by relative movement of a water absorbing support on the portion of the face.

The dried portion is reacted with a reactive composition to form a silicon containing layer chemically bound to the siliceous substrate.

Preferred Condition: The treatment of the portion with the biocide composition is made at least partly not in presence of a reactive agent that forms a layer chemically bound to the siliceous substrate.

The portion of the face is at least treated with a composition containing metal ion(s) before reacting the portion with the reactive silicon containing composition.

The treated composition is reacted with the reactive composition for at least 10, preferably at least 45 seconds, with the composition containing biocide(s).

The treatment with the biocide is performed in the presence of a stabilizing agent at 0, preferably 30degrees C to boiling point of the biocide containing composition.

The biocide treatment is carried out in the presence of free-radical scavenger(s).

ORGANIC CHEMISTRY - Preferred Component: The biocide composition comprises aqueous composition, solvent containing composition and/or alcohol containing composition.

It comprises biocide composition containing surfactant(s); biocide composition containing biocide(s) bound to a surfactant;

biocide composition containing surfactant and/or an acid; biocide composition containing acid(s) and biocide(s) bound to a surfactant; biocide composition containing metal(s) and surfactant(s); biocide composition containing one surfactant, a metal, and/or biocide(s) bound to a surfactant.

At least one of the biocide present in the composition comprises thiazole compounds and their derivatives or isothiazole compound and their derivative.

The reactive composition contains reactive silicon containing reagent bound to at least one fluorine atom (particularly fluorosilane or siloxane compound).

Preferred Composition: The solution containing the biocide contains less than 5 weight% of halogenated compounds.

Preferred Compound: The biocide composition contains at least one biocide comprising 3-isothiazole compound;

5-chloro-2-methyl-3-isothiazole;

1-methyl-3,5,7-triaza-1-azoniatricyclo(3.3.1.1)decane chloride;

4,5-dichloro-2-octyl-3-isothiazole; 2-bromo-2-nitropropanediol;

5-bromo-5-nitro dioxane; thiocyanomethylthiobenzothiazole;

4,5-dichloro-2-octyl-3-isothiazolone; 2n-octyl-3-isothiazole;

tetrachloroisophalonitrile; 1,2-benzisothiazolin-3-one;

2-methyl-4,5-trimethylene-4-isothiazolin-3-one;

5-chloro-2-methyl-4-isothiazolin-3-one;

2-methyl-4-isothiazolin-3-one; 4-(2-nitrobutyl)morpholine;

beta-nitrostyrene; beta-bromo-beta-nitrostyrene;

methylchloroisothiazole; methylenebisthiocyanate;

2,2-dibromo-3-nitrilopropionamide;

2-bromo-2-bromomethyl-glutaronitrile; alkyldimethylbenzylammonium

chloride; beta nitrovinyl furan; 2-methyl-3-isothiazolone;

methylenebisthiocyanate; p-tolyldiiodomethyl sulfone;

2-methylthio-4-tert-butylamino-6-cyclopropylamino-s-triazine;

N,N-dimethyl-N'-phenyl-(N'-fluorodichloromethylthio)sulfamide;

antibiotics; sulfamides; tetracycline; isothiazolone derivatives;

or N-(cyclo)alkyl-isothiazolone. The free-radical scavenger

comprises 3,3-thiodipropionic acid; L-ascorbic acid; D-ascorbic

acid; fumaric acid; diethylhydroxylamine; glutaraldehyde;

butyraldehyde; L-tartaric acid; 4-methoxyphenol and/or propyl

gallate.

INORGANIC CHEMISTRY - Preferred Component: At least one of the biocide present in the composition can also comprise ammonium and their derivative, phosphonium and their derivatives or ammonium-phosphonium compounds and their derivative. The metal ion comprises copper, silver, gold, platinum, zinc, magnesium, calcium, sodium, cadmium, rhodium and/or palladium.

EXTENSION ABSTRACT:

EXAMPLE - A glass sheet with a thickness of 5mm was dipped in an aqueous biocide solution containing 0.2 weight% of a mixture of 5-chloro-2-methyl-3-(2H)-isothiazolone and 2-methyl-3-(2H)-3-isothiazolone; and glutaraldehyde (0.05%). The weight ratio of 5-chloro-2-methyl-3-isothiazolone/2-methyl-3-isothiazolone was 1. After 5 minutes, the glass sheet was removed and was dried with an absorbing paper so that the glass sheet was substantially free of water. The glass sheet was then coated with a biocide solution comprising biocide B (5-chloro-2-methyl-3-isothiazolone); metal cation comprising 50 ppm copper; and a free-radical scavenger of glutaraldehyde (0.015). The treated glass sheet was covered by a fluoro silane layer.

FILE SEGMENT:

CPI; GMPI

MANUAL CODE:

CPI: D09-A01; E05-G02; E05-G03A; E06-D17; E06-F01;
E06-F03; E07-A01; E07-A04; E07-D13B; E07-E03;
E07-F01; E10-A08; E10-A10C; E10-A14B; E10-A15A;
E10-A15F; E10-A22; E10-D01D; E10-E04J; E10-G03C;

E31-P06A; G02-A05; L01-G04B

L29 ANSWER 5 OF 12 WPIX COPYRIGHT 2010 THOMSON REUTERS on STN
 ACCESSION NUMBER: 2002-124095 [17] WPIX
 DOC. NO. CPI: C2002-038169 [17]
 TITLE: Composition for production of poorly wettable
 surfaces, e.g. for anti-corrosion, anti-weathering
 and self-cleaning effects, contains fine
 hydrophobic powder with a porous structure and a
 binder with a low surface tension
 DERWENT CLASS: A14; A17; A82; G02; P42; P73
 INVENTOR: FRECHEN T; HUEFFER S; HUFFER S; JAHNS E; KELLER H;
 KREBS T; KUEHN I; KUHN I; LACH C; THOMANN Y
 PATENT ASSIGNEE: (BADI-C) BASF AG; (FREC-I) FRECHEN T; (HUFF-I)
 HUFFER S; (JAHN-I) JAHNS E; (KELL-I) KELLER H;
 (KREB-I) KREBS T; (KUHN-I) KUHN I; (LACH-I) LACH C;
 (THOM-I) THOMANN Y
 COUNTRY COUNT: 28

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
EP 1153987	A2	20011114	(200217)*	DE	14[0]	
<--						
DE 10022246	A1	20011115	(200217)	DE		
<--						
US 20020016433	A1	20020207	(200217)	EN		
<--						
JP 2002038102	A	20020206	(200226)	JA	12	
<--						
US 6683126	B2	20040127	(200408)	EN		
EP 1153987	B1	20060503	(200629)	DE		
DE 50109664	G	20060608	(200639)	DE		
ES 2263530	T3	20061216	(200710)	ES		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 1153987 A2		EP 2001-110983	
20010507			
DE 10022246 A1		DE 2000-10022246	
20000508			
US 20020016433 A1		US 2001-840887	
20010425			
US 6683126 B2		US 2001-840887	
20010425			
DE 50109664 G		DE 2001-509664	
20010507			
DE 50109664 G		EP 2001-110983	
20010507			
JP 2002038102 A		JP 2001-136611	
20010507			
ES 2263530 T3		EP 2001-110983	
20010507			

FILING DETAILS:

PATENT NO	KIND	PATENT NO
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DE 50109664	G	Based on	EP 1153987	A
ES 2263530	T3	Based on	EP 1153987	A

PRIORITY APPLN. INFO: DE 2000-10022246 20000508

INT. PATENT CLASSIF.:

MAIN: C09D005-00
 SECONDARY: C08K009-06; C09D007-12
 IPC ORIGINAL: C08K0009-00 [I,C]; C08K0009-00 [I,C]; C08K0009-06 [I,A]; C08K0009-06 [I,A]; C09D0005-00 [I,A]; C09D0005-00 [I,C]; C09D0005-00 [I,A]; C09D0007-12 [I,A]; C09D0007-12 [I,C]; C09D0007-12 [I,A]
 IPC RECLASSIF.: B05D0005-08 [I,A]; B05D0005-08 [I,C]; B05D0007-24 [I,A]; B05D0007-24 [I,C]; B32B0009-00 [I,A]; B32B0009-00 [I,C]; C09D0123-00 [I,C]; C09D0123-02 [I,A]; C09D0127-18 [I,A]; C09D0127-18 [I,C]; C09D0157-00 [I,A]; C09D0157-00 [I,C]; ~~C09D0183-08~~ [I,A]; ~~C09D0183-08~~ [I,C]; C09D0201-00 [I,A]; C09D0201-00 [I,C]; C09D0007-12 [I,A]; C09D0007-12 [I,C]

ECLA:

USCLASS NCLM:

JAP. PATENT CLASSIF.:

MAIN/SEC.: B05D0005-08 Z; B05D0007-24 303 E; B32B0009-00 Z; C09D0123-02; C09D0127-18; C09D0157-00; C09D0183-08; C09D0201-00; C09D0007-12

FTerm CLASSIF.:

4D075; 4F100; 4J038; 4F100/AA17.B; 4F100/AA20.B; 4F100/AA20.H; 4F100/AK03.B; 4F100/AK04.B; 4F100/AK17.B; 4F100/AK18.B; 4F100/AK21; 4F100/AK52.B; 4F100/AL01.B; 4F100/AL05.B; 4F100/AT00.A; 4F100/BA02; 4D075/CA06; 4F100/CA30.B; 4F100/CA30.H; 4D075/CA34; 4D075/CA36; 4J038/CB00.1; 4J038/CB00.2; 4F100/CC00.B; 4J038/CD09.1; 4J038/CD12.2; 4J038/CE07.1; 4J038/CF02.1; 4J038/CG14.1; 4D075/DA06; 4F100/DA11.A; 4D075/DA13; 4D075/DA23; 4D075/DB01; 4D075/DB12; 4D075/DB13; 4D075/DB14; 4D075/DB16; 4D075/DB18; 4D075/DB20; 4D075/DB21; 4D075/DB31; 4D075/DC01; 4D075/DC05; 4D075/DC11; 4D075/DC15; 4D075/DC18; 4D075/DC24; 4D075/DC30; 4D075/DC38; 4D075/DC41; 4J038/DE00.1; 4F100/DE01.B; 4F100/DJ00.B; 4J038/DL03.1; 4J038/DL07.2; 4D075/EA17; 4D075/EA19; 4D075/EA24; 4D075/EB13; 4D075/EB14; 4D075/EB16; 4D075/EB18; 4D075/EB19; 4D075/EB22; 4D075/EB35; 4D075/EB37; 4D075/EB43; 4D075/EB52; 4D075/EB56; 4D075/EB60; 4D075/EC07; 4D075/EC53; 4D075/EC54; 4D075/EC60; 4F100/EH61.B; 4F100/GB16; 4J038/HA44.6; 4F100/JB06.B; 4F100/JD15; 4F100/JM02.B; 4J038/KA06; 4J038/KA07; 4J038/KA15; 4J038/KA20; 4J038/MA14; 4J038/NA05; 4J038/NA07; 4J038/PC02

BASIC ABSTRACT:

EP 1153987 A2 UPAB: 20050902

NOVELTY - A composition for the production of poorly wettable surfaces contains

(i) finely-divided powder comprising particles with a hydrophobic surface and a porous structure characterized by a BET surface (DIN 66131) of at least 1 m²/g; and (ii) film-forming binder(s) with a surface tension of less than 50 mN/m, in a powder:binder weight ratio of at least 1:4.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for

(a) a method for the production of poorly wettable surfaces by coating a conventional surface with the composition described; and
(b) molded products with surfaces substantially consisting of such a composition.

USE - For the production of poorly wettable surfaces and/or surfaces with a self-cleaning effect, for reducing the flow resistance in tubes, capillaries and nozzles, and for the production of molded products (claimed). Applications include the corrosion-proofing of wood, metal, concrete etc., surface finishing of paper, cardboard and plastic film, protection of electrical equipment from weathering, protection of surfaces from soiling (roofs, walls, floors etc.), prevention of coatings in reactors and blockages in tubes, etc.

ADVANTAGE - Enables the simple and reproducible production of stable surface coatings with poor wettability. TECHNOLOGY FOCUS:

POLYMERS - Preferred Components: Component (i) comprises an oxide support (especially pyrogenic silica) with a hydrophobic surface layer (preferably formed by perfluoroalkylsilane and/or perfluoroalkylsiloxane groups), or a polymer powder with a weight-average particle size of 0.2-100 microns, especially polytetrafluoroethylene or poly-(2-4C olefin) powder. Binder (ii) comprises homo- or co-polymers of hydrophobic, ethylenically unsaturated monomers with a water solubility of less than 1 g/l at 25 degreesC, optionally with suitable comonomers.

Preferred Composition: Coating material, preferably in the form of a free-flowing preparation containing organic diluent(s) and/or solvent(s) or an aerosol containing propellant(s).

Preferred Method: The coating composition is applied in amounts of 0.01-1000 g/m² based on its solid components.

EXTENSION ABSTRACT:

EXAMPLE - A solution of 10.73 g poly-octadecylvinyl ether (mol. weight 3000; surface tension 27.7 mN/m) in 96.6 g petroleum ether (boiling point 60-80degreesC) was treated with 10.73 g Aerosil R812S (RTM: hydrophobically treated pyrogenic silica; BET surface 220 m²/g) and vigorously stirred to give a dispersion (B2). This product was coated onto polyethylene terephthalate film using a spreader gap of 100 microns and then dried. The treated film showed a repellent power (for 10 weight% aqueous ethanol solution) of 358 mN/m, using a drop size of 5.44 mg. When the treated film was soiled with Printex V (RTM: carbon black powder), the carbon black was completely removed from the surface by dropping water on the coating, without the need to use detergents.

FILE SEGMENT: CPI; GMPI

MANUAL CODE: CPI: A12-B; G02-A05E; G02-A05G

L29 ANSWER 6 OF 12 WPIX COPYRIGHT 2010 THOMSON REUTERS on STN

ACCESSION NUMBER: 2001-226331 [23] WPIX

DOC. NO. CPI: C2001-067456 [23]

TITLE: Improving long-term corrosion resistance of metal involves coating it with ureido silane-containing solution

DERWENT CLASS: A26; A82; E11; G02; M14; P42

INVENTOR: BINES E B; BROWN K; SONG J; TANG N

PATENT ASSIGNEE: (BREN-C) BRENT INT PLC; (CMTL-C) CHEMETALL CO LTD; (CMTL-C) CHEMETALL PLC

COUNTRY COUNT: 89

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 2000046311	A1	20000810	(200123)*	EN	35	[0]

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AU 2000023093  A  20000825  (200123)  EN
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US 6106901      A  20000822  (200123)  EN
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EP 1163296      A1 20011219  (200206)  EN
<--
US 6361592      B1 20020326  (200226)  EN
<--
CN 1353744      A  20020612  (200262)  ZH
<--
JP 2002536159   W  20021029  (200274)  JA   36
<--
EP 1163296      B1 20041201  (200479)  EN
DE 60016390     E  20050105  (200505)  DE
ES 2231155      T3 20050516  (200535)  ES
DE 60016390     T2 20051027  (200571)  DE
CN 1164690      C  20040901  (200615)  ZH
JP 4138253      B2 20080827  (200857)  JA   21

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APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2000046311	A1	WO 2000-GB350	20000204
US 6106901	A	US 1999-245602	
19990205			
US 6361592	B1 Div Ex	US 1999-245602	
19990205			
AU 2000023093	A	AU 2000-23093	20000204
CN 1353744	A	CN 2000-805195	
20000204			
CN 1164690	C	CN 2000-805195	
20000204			
DE 60016390	E	DE 2000-60016390	
20000204			
DE 60016390	T2	DE 2000-60016390	
20000204			
EP 1163296	A1	EP 2000-901796	
20000204			
EP 1163296	B1	EP 2000-901796	
20000204			
DE 60016390	E	EP 2000-901796	
20000204			
ES 2231155	T3	EP 2000-901796	
20000204			
DE 60016390	T2	EP 2000-901796	
20000204			
JP 2002536159	W	JP 2000-597374	
20000204			
EP 1163296	A1	WO 2000-GB350	20000204
JP 2002536159	W	WO 2000-GB350	20000204
EP 1163296	B1	WO 2000-GB350	20000204
DE 60016390	E	WO 2000-GB350	20000204
DE 60016390	T2	WO 2000-GB350	20000204
US 6361592	B1	US 2000-640143	
20000816			
JP 4138253	B2	JP 2000-597374	
20000204			
JP 4138253	B2	WO 2000-GB350	20000204

FILING DETAILS:

PATENT NO	KIND		PATENT NO	
DE 60016390	E	Based on	EP 1163296	A
ES 2231155	T3	Based on	EP 1163296	A
DE 60016390	T2	Based on	EP 1163296	A
US 6361592	B1	Div ex	US 6106901	A
AU 2000023093	A	Based on	WO 2000046311	A
EP 1163296	A1	Based on	WO 2000046311	A
JP 2002536159	W	Based on	WO 2000046311	A
EP 1163296	B1	Based on	WO 2000046311	A
DE 60016390	E	Based on	WO 2000046311	A
DE 60016390	T2	Based on	WO 2000046311	A
JP 4138253	B2	Previous Publ	JP 2002536159	W
JP 4138253	B2	Based on	WO 2000046311	A

PRIORITY APPLN. INFO: US 1999-245602 19990205
 US 2000-640143 20000816

INT. PATENT CLASSIF.:

MAIN: B05D007-24; C09D004-00
 SECONDARY: C23C022-02; B05D001-36; B05D007-14; C09D183-04;
 C09D183-14; C23F011-10
 IPC ORIGINAL: B05D0001-36 [I,A]; B05D0001-36 [I,C]; B05D0007-14
 [I,A]; B05D0007-14 [I,C]; B05D0007-24 [I,A];
 B05D0007-24 [I,C]; C09D0183-04 [I,A]; C09D0183-04
 [I,C]; C23F0011-10 [I,A]; C23F0011-10 [I,C]

IPC RECLASSIF.: B05D0001-36 [I,A]; B05D0001-36 [I,C]; B05D0007-14
 [I,A]; B05D0007-14 [I,C]; B05D0007-24 [I,A];
 B05D0007-24 [I,C]; C09D0183-04 [I,A]; C09D0183-04
 [I,C]; C09D0183-14 [I,A]; C09D0183-14 [I,C];
 C09D0004-00 [I,A]; C09D0004-00 [I,C]; C23C0022-05
 [I,C]; C23C0022-50 [I,A]; C23C0022-53 [I,A];
 C23C0022-56 [I,A]; C23F0011-10 [I,A]; C23F0011-10
 [I,C]

ECLA: C09D0004-00+C08G77/00; C09D0004-00+C08G77/26;
 C09D0183-14; C23C0022-50; C23C0022-53; C23C0022-56
 106/287.110

USCLASS NCLM:

JAP. PATENT CLASSIF.:

MAIN/SEC.: B05D0001-36 Z; B05D0007-14 G; B05D0007-24 302 Y;
 C09D0183-04; C23F0011-10

MAIN: B05D0007-24 302 Y
 SECONDARY: B05D0001-36 Z; B05D0007-14 G; C09D0183-04;
 C23F0011-10

FTERM CLASSIF.: 4D075; 4J038; 4K062; 4K062/AA01; 4K062/AA03;
 4D075/AB01; 4D075/AB56; 4D075/AE03; 4D075/BB26.Z;
 4K062/BB30; 4D075/BB93.Z; 4K062/CA04; 4K062/CA05;
 4D075/CA13; 4D075/CA33; 4D075/DA03; 4D075/DA06;
 4D075/DB02; 4D075/DB05; 4D075/DB07; 4D075/DC01;
 4D075/DC11; 4D075/DC18; 4J038/DL02.1; 4D075/EA06;
 4D075/EA07; 4D075/EA35; 4D075/EB12; 4D075/EB22;
 4D075/EB38; 4D075/EB43; 4D075/EB47; 4D075/EB56;
 4D075/EC07; 4D075/EC30; 4K062/FA16; 4J038/JC35;
 4J038/PC02

BASIC ABSTRACT:

WO 2000046311 A1 UPAB: 20100303

NOVELTY - A method of permanently improving the corrosion resistance of a metal substrate comprises applying a coating by contacting the metal substrate with a solution containing one or more hydrolyzed or partially hydrolyzed

ureido silanes, one or more hydrolyzed or partially hydrolyzed multi-silyl-functional silanes and a solvent, and then removing the solvent.

DETAILED DESCRIPTION - A method of treating a metal sheet comprises applying a coating by contacting the metal substrate with a solution containing one or more hydrolyzed or partially hydrolyzed ureido silanes, one or more hydrolyzed or partially hydrolyzed multi-silyl-functional silanes and a solvent, and then removing the solvent. Also claimed is a composition comprising at least one ureido silane and at least one multi-silyl-functional silane.

USE - The method is particularly used on cold-rolled steel, zinc, iron, aluminum and aluminum alloy surfaces. The method is particularly used when the metal is to be subsequently painted or bonded to rubber or metal.

ADVANTAGE - The treatment solution permanently improves the corrosion resistance of a metal substrate (claimed) in a single-step treatment process. The treatment composition does not have to be removed prior to painting and it can be applied directly onto the metal surface.

TECHNOLOGY FOCUS:

ORGANIC CHEMISTRY - Preferred Method: The method further comprises curing the coating at 40-180 degreesC.

The method further comprises applying a second treatment solution containing either one or more hydrolyzed or partially hydrolyzed ureido silanes and one or more hydrolyzed or partially hydrolyzed multi-silyl-functional silanes to the metal sheet; or one or more hydrolyzed or partially hydrolyzed organofunctional silanes.

The solution additionally comprises an acid, preferably selected from acetic, oxalic, formic and propionic acid. The solvent comprises an organic solvent, preferably an alcohol, or water.

The concentration of multi-silyl-functional silanes in the solution is 0.1-10 (preferably 0.2-2, especially less than 1) %.

The concentration of ureido silanes in the solution is 0.1-10 (preferably 0.2-3, especially less than 1) %.

The ratio of ureido silanes to the multi-silyl-functional silanes is 1:1-1:10 (preferably 1:1-1:8, especially 1:2-1:5). The metal substrate is dipped (preferably for 1 second to 20 minutes, especially for 10 seconds to 2 minutes) in the treatment solution.

Preferred Ureido Silane: The ureido silanes are of formula $(R1)2N-C(O)-N(R2)-X-Si(OR)3$ (I).

R = H, 1-24C alkyl or 2-24C acyl, preferably 1-6C alkyl or 2-4C acyl group, especially H, ethyl, methyl, propyl, isopropyl, butyl, isobutyl, sec-butyl, ter-butyl or acetyl;

X = bond, 1-6C alkylene, 2-6C alkenylene, 1-6C alkylene substituted with an amino group(s), 2-6C alkenylene substituted with an amino group(s), arylene or alkylarylene; and

R1, R2 = H, 1-6C alkyl, 2-6C alkenyl, 1-6C alkyl substituted with an amino group(s), 2-6C alkenyl substituted with an amino group(s), arylene or alkylarylene, preferably H, ethyl, methyl, propyl, isopropyl, butyl, isobutyl, sec-butyl, ter-butyl or acetyl.

(I) is preferably gamma-ureidopropyltriethoxysilane

Preferred Functional Silane: The multi-silyl-functional silane is of formula is preferably 1,2-bis-(triethoxysilyl)ethane.

METALLURGY - Preferred Method: The metal substrate is selected from cold-rolled steel, steel coated with a metal selected from zinc, zinc alloy, aluminum or aluminum alloy, iron, aluminum and aluminum alloy.

POLYMERS - Preferred Method: A polymer coating is applied on top of the silane treatment.

Preferably the polymer coating is selected from paint, rubber and adhesive and is adhered to the silane

coating.

EXTENSION ABSTRACT:

EXAMPLE - 1,2-bis-(triethoxysilyl) ethane (BTSE) (3 parts by volume (pts. volume)) was mixed with demineralized water (4 pts. volume) and industrial methylated spirits (17 pts. volume) and left for 7 days. The gamma-ureidopropyltriethoxysilane (gamma-UPS) was hydrolyzed before use by taking Silquest A1160(TM) (50% solution of gamma-UPS in methanol), adding demineralized water to give a 40% solution of gamma-UPS and leaving for 1 hour. This solution was diluted to 2% and the pH adjusted to 6 with acetic acid. Enough hydrolyzed BTSE was added to the neutralized gamma-UPS to give 1% BTSE. The steel substrate was immersed for 30 seconds in the solution, allowed to drain and then dried in an oven at 85 degreesC. 60-90 microns paint film was applied and the panel subjected to accelerated corrosion testing and paint film adhesion testing. - The results indicated good corrosion resistance properties and paint film adhesion properties.

FILE SEGMENT:

CPI; GMPI

MANUAL CODE:

CPI: A06-A00E1; A08-M01B; A08-M01D; A12-B04;
A12-B04C; E05-E01; E05-E02D; E05-E03; G02-A05E;
M14-K

L29 ANSWER 7 OF 12

WPIX COPYRIGHT 2010

THOMSON REUTERS on STN

ACCESSION NUMBER:

1998-497849 [43] WPIX

CROSS REFERENCE:

1992-160576; 1992-218744; 1992-227367; 1992-260657;
1995-024224; 1998-469214; 2003-048214

DOC. NO. CPI:

C1998-150057 [43]

TITLE:

Water and oil repellent film, used for
coating glass, ceramic, plastic and
metal - comprises silica primer layer and
fluorine-containing siloxane fluorocarbon
based polymer film

DERWENT CLASS:

A26; A82; E11; G02; L01

INVENTOR:

OGAWA K; SOGA M

PATENT ASSIGNEE:

(MATU-C) MATSUSHITA ELECTRIC IND CO LTD

COUNTRY COUNT:

3

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
EP 867490	A2	19980930	(199843)*	EN	47	[46]
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APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 867490	A2 Div Ex	EP 1992-100938	
	19920121		
EP 867490	A2 Div Ex	EP 1994-114633	
	19920121		
EP 867490	A2	EP 1998-110719	
	19920121		

FILING DETAILS:

PATENT NO	KIND	PATENT NO
EP 867490	A2	EP 497189 A
EP 867490	A2	EP 629673 A

PRIORITY APPLN. INFO: JP 1991-132737 19910604
JP 1991-24023 19910123
JP 1991-24024 19910123
JP 1991-36773 19910205
JP 1991-36775 19910205
JP 1991-38133 19910206

INT. PATENT CLASSIF.:

IPC RECLASSIF.: C03C0017-42 [I,A]; C03C0017-42 [I,C]; C08J0007-00
[I,C]; C08J0007-04 [I,A]; C09D0183-02 [I,A];
C09D0183-02 [I,C]; C09D0183-08 [I,A];
C09D0183-08 [I,C]

ECLA: C03C0017-42; C08J0007-04D; C09D0183-02; C09D0183-08

ICO: L82T0201:01P; L82T0201:01T; Y01N0006:00

BASIC ABSTRACT:

EP 867490 A2 UPAB: 20060114 An article comprises a glass substrate at least a portion of which is treated with (A) a silica primer layer and (B) a water and oil repellent layer containing fluorocarbon groups and ~~siloxane~~ groups applied to (A).

Also claimed is a method for forming a non-wettable surface (water and oil repellent) on a glass substrate by deposition of (A) followed by coating with (B) containing a ~~perfluoroalkyl silane~~.

(B) is most preferably CF₃(CF₂)₅(CH₂)₂SiCl₃; CF₃(CF₂)₇(CH₂)₂SiCl₃; CF₃CH₂O(CH₂)₁₅SiCl₃; CF₃(CH₂)₂Si(CH₃)₂(CH₂)₁₅SiCl₃;

F(CF₂)₄(CH₂)₂Si(CH₃)₂(CH₂)₉SiCl₃; CF₃COO(CH₂)₁₅SiCl₃;

F(CF₂)₈(CH₂)₂Si(CH₃)₂(CH₂)₉SiCl₃; F(CF₂)₈(CH₂)₂Si(CH₃)₂(CH₂)₆SiCl₃;

CF₃CH₂O(CH₂)₁₅Si(OCH₃)₃; CF₃(CF₂)₇(CH₂)₂Si(OC₂H₅)₃;

CF₃(CH₂)₂Si(CH₃)₂(CH₂)₁₅Si(OCH₃)₃; F(CF₂)₈(CH₂)₂Si(CH₃)₂(CH₂)₉Si(OCH₃)₃;

CF₃COO(CH₂)₁₅Si(OC₂H₅)₃. The silica primer layer (A) and the ~~perfluoroalkyl alkyl silane~~ are reacted by a dehydrochlorination or dealcoholisation reaction. (A) is formed by applying silicate glass to the surface and then heating or plasma ashing or by application of SiCl₄, SiHCl₃, SiH₂Cl₂, or Cl-(SiCl₂)_n-SiCl₃ and reaction with water through a dehydrochlorination and a hydrolysis reaction.

USE - The water and oil repelling film is useful for coating vehicles, industrial apparatus, glass, ceramic, ~~metal~~ and plastics products.

ADVANTAGE - The coating films are thin and are heat weather and wear resistant.

DOCUMENTATION ABSTRACT:

EP867490

An article comprises a glass substrate at least a portion of which is treated with:

(A) a silica primer layer and

(B) a water and oil repellent layer containing fluorocarbon groups and ~~siloxane~~ groups applied to (A).

Also claimed is a method for forming a non-wettable surface (water and oil repellent) on a glass substrate by deposition of (A) followed by coating with (B) containing a ~~perfluoroalkyl silane~~.

USE

The water and oil repelling film is useful for coating vehicles, industrial apparatus, glass, ceramic, ~~metal~~ and plastics products.

ADVANTAGE

The coating films are thin and are heat weather and wear resistant.

EXAMPLE

A hydrophilic surface was coated with a solution of 90% n-hexadecane and 10% chloroform containing CF₃(CF₂)₅(CH₂)₂SiCl₃

and hydrophilic silica particles followed by heating at 200°C for 30 minutes.

The resulting fluorine containing ~~siloxane~~ fluorocarbon based polymer film (3) was chemically bonded to the surfaces of the substrate (1) and fine particles.

(SB)

PREFERRED COMPOSITION

(B) is most preferably $\text{CF}_3(\text{CF}_2)_5(\text{CH}_2)_2\text{SiCl}_3$; $\text{CF}_3(\text{CF}_2)_7(\text{CH}_2)_2\text{SiCl}_3$; $\text{CF}_3\text{CH}_2\text{O}(\text{CH}_2)_{15}\text{SiCl}_3$; $\text{CF}_3(\text{CH}_2)_2\text{Si}(\text{CH}_3)_2(\text{CH}_2)_{15}\text{SiCl}_3$; $\text{F}(\text{CF}_2)_4(\text{CH}_2)_2\text{Si}(\text{CH}_3)_2(\text{CH}_2)_9\text{SiCl}_3$; $\text{CF}_3\text{COO}(\text{CH}_2)_{15}\text{SiCl}_3$; $\text{F}(\text{CF}_2)_8(\text{CH}_2)_2\text{Si}(\text{CH}_3)_2(\text{CH}_2)_9\text{SiCl}_3$; $\text{F}(\text{CF}_2)_8(\text{CH}_2)_2\text{Si}(\text{CH}_3)_2(\text{CH}_2)_6\text{SiCl}_3$; $\text{CF}_3\text{CH}_2\text{O}(\text{CH}_2)_{15}\text{Si}(\text{OCH}_3)_3$; $\text{CF}_3(\text{CF}_2)_7(\text{CH}_2)_2\text{Si}(\text{OC}_2\text{H}_5)_3$; $\text{CF}_3(\text{CH}_2)_2\text{Si}(\text{CH}_3)_2(\text{CH}_2)_{15}\text{Si}(\text{OCH}_3)_3$; $\text{F}(\text{CF}_2)_8(\text{CH}_2)_2\text{Si}(\text{CH}_3)_2(\text{CH}_2)_9\text{Si}(\text{OCH}_3)_3$; $\text{CF}_3\text{COO}(\text{CH}_2)_{15}\text{Si}(\text{OC}_2\text{H}_5)_3$.

The silica primer layer (A) and the ~~perfluoroalkyl~~ alkyl ~~silane~~ are reacted by a dehydrochlorination or dealcoholisation reaction. (A) is formed by applying silicate glass to the surface and then heating or plasma ashing or by application of SiCl_4 , SiHCl_3 , SiH_2Cl_2 , or $\text{Cl}-(\text{SiCl}_2\text{O})_n-\text{SiCl}_3$ and reaction with water through a dehydrochlorination and a hydrolysis reaction.

FILE SEGMENT: CPI
MANUAL CODE: CPI: A06-A00E1; A12-B01C; E05-E01; E05-E02;
E31-P03; E31-P06B; G02-A01A; L01-G04B

L29 ANSWER 8 OF 12 WPIX COPYRIGHT 2010 THOMSON REUTERS on STN
ACCESSION NUMBER: 1998-469214 [41] WPIX
CROSS REFERENCE: 1992-160576; 1992-218744; 1992-227367; 1992-260657;
1995-024224; 1998-497849; 2003-048214
DOC. NO. CPI: C1998-142300 [41]
TITLE: Water and oil repellent, crosslinked surface
coatings - prepared from silane containing
fluorocarbon and chloro-silane groups and silicon
containing crosslinking agent
DERWENT CLASS: A82; E11; G02; L01; L03
INVENTOR: OGAWA K; SOGA M
PATENT ASSIGNEE: (MATU-C) MATSUSHITA ELECTRIC IND CO LTD
COUNTRY COUNT: 3

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
EP 864622	A2	19980916	(199841)*	EN	49	[46]
<--						

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 864622	A2 Div Ex	EP 1992-100938	
	19920121		
EP 864622	A2 Div Ex	EP 1994-114633	
	19920121		
EP 864622	A2	EP 1998-110689	
	19920121		

FILING DETAILS:

PATENT NO	KIND	PATENT NO

EP 864622 A2	Div ex	EP 497189 A
EP 864622 A2	Div ex	EP 629673 A

PRIORITY APPLN. INFO: JP 1991-132737 19910604
JP 1991-24023 19910123
JP 1991-24024 19910123
JP 1991-36773 19910205
JP 1991-36775 19910205
JP 1991-38133 19910206

INT. PATENT CLASSIF.:

IPC RECLASSIF.: B05D0001-18 [I,A]; B05D0001-18 [I,C]; C03C0017-42 [I,A]; C03C0017-42 [I,C]; C08J0007-00 [I,C]; C08J0007-04 [I,A]; C09D0183-02 [I,A]; C09D0183-02 [I,C]; C09D0183-08 [I,A]; C09D0183-08 [I,C]; C09D0004-00 [I,A]; C09D0004-00 [I,C]

ECLA: B05D0001-18C; C03C0017-42; C08J0007-04L83; C09D0004-00+C08G77/24; C09D0183-02; C09D0183-08

ICO: L82T0201:01P; L82T0201:01T; Y01N0006:00

BASIC ABSTRACT:

EP 864622 A2 UPAB: 20050522 An article comprises a water- and oil-repellent surface, which is coated with a mixture of a silane containing fluorocarbon and chlorosilane groups (A) and a crosslinking agent comprising silicon, optionally mixed with a silane containing fluorocarbon and alkoxysilane groups (B). The substrate is selected from glass, ceramic, metal, plastic and substrates coated with an inorganic coating film.

USE - For providing heat-, weather and wear-resistant water- and oil-repelling monomolecular adsorbed films on buildings and building materials, electrical products, vehicles, industrial equipment and household appliances, and glass, ceramic, metal and plastic products, e.g. mirrors and glass lenses, cutlery, needles, pottery products, moulds and dies, ornaments, cookware, paper, sports articles, office equipment, musical instruments, etc.

ADVANTAGE - The coating has strong adhesion to the substrate, it is free from pin-holes, it has a desirable level of surface irregularities and excellent water- and oil-repellency, and it is durable.

DOCUMENTATION ABSTRACT:

EP864622

An article comprises a water- and oil-repellent surface, which is coated with a mixture of a silane containing fluorocarbon and chlorosilane groups (A) and a crosslinking agent comprising silicon, optionally mixed with a silane containing fluorocarbon and alkoxysilane groups (B). The substrate is selected from glass, ceramic, metal, plastic and substrates coated with an inorganic coating film.

USE

For providing heat-, weather and wear-resistant water- and oil-repelling monomolecular adsorbed films on buildings and building materials, electrical products, vehicles, industrial equipment and household appliances, and glass, ceramic, metal and plastic products, e.g. mirrors and glass lenses, cutlery, needles, pottery products, moulds and dies, ornaments, cookware, paper, sports articles, office equipment, musical instruments, etc.

ADVANTAGE

The coating has strong adhesion to the substrate, it is free from pin-holes, it has a desirable level of surface irregularities and excellent water- and oil-repellency, and it is durable.

EXAMPLE

A substrate was rendered hydrophilic by oxygen-containing plasma or corona treatment at 100 W for 20 mins. to provide surface hydroxyl groups. It was then coated with a solution/suspension of 1 weight% $\text{CF}_3(\text{CF}_2)_5(\text{CH}_2)_2\text{SiCl}_3$ (VII) and 10 weight% hydrophilic fine surface silica particles in 80:12:8 n-hexadecane:carbon tetrachloride:chloroform. The substrate was baked in a moisture-containing atmosphere at 200°C for 30 mins. to obtain a coating film with surface irregularities of preferably 1-10 μm and thickness 1-5 μm . The film did not separate in a checkerboard test. Adding 3 weight% of SiCl_4 produced a 3-dimensionally crosslinked coating with double the hardness, surface irregularities of 10 μm and a water wetting angle of 130-140°. Crosslinking the coating by electron beam radiation at 5 Mrad increased the hardness by 10 times.

PREFERRED MATERIALS

Silane (A) is a perfluoroalkyl alkyl chlorosilane of formula $\text{CF}_3(\text{CF}_2)_n\text{-R-SiXpCl}_{3-p}$ (I).

n = an integer, 0 or more;

R = alkylene, ethylene, acetylene or a group comprising Si and O;

X = H or (cyclo)alkyl or allyl or their derivatives; and
p = 0, 1 or 2.

Preferred are $\text{CF}_3(\text{CF}_2)_5(\text{CH}_2)_2\text{SiCl}_3$, $\text{CF}_3(\text{CF}_2)_5(\text{CH}_2)_2\text{SiCl}_2\text{CH}_3$, $\text{CF}_3(\text{CH}_2)_2\text{Si}(\text{CH}_3)_2(\text{CH}_2)_2\text{SiCl}_3$ and 9 named others.

Silane (B) is a perfluoroalkyl alkyl alkoxysilane of formula $\text{CF}_3(\text{CF}_2)_n\text{-R-SiYq(OA)}_{3-q}$ (II).

A = H or alkyl; and

q = 0, 1 or 2.

The crosslinking agent has the formula SiPsCl_{4-s} (III) or SiXsCl_{4-s} (IV).

P = H or lower alkyl or alkoxy, or $\text{Cl}(\text{SiCl}_2\text{O})_n$ (especially H or Cl when the silane is completely hydrolysable);

s = 0, 1 or 2;

n = an integer, 0 or more;

Y = lower alkyl or alkoxy;

A = H or lower alkyl; and

t = 0, 1 or 2 (especially 0, when the silane is completely hydrolysable). Preferred combinations of perfluoroalkyl alkyl silane and the completely hydrolysable

silane are perfluoroalkyl alkyl chlorosilane and

Si(OA)_4 (V), and perfluoroalkyl alkyl alkoxysilane and (VI).

X = H, Cl or $\text{Cl}(\text{SiCl}_2\text{O})_n$.

PREFERRED ARTICLE

The inorganic coating film is a glassy silica film formed by applying silicate glass to the surface of a glass substrate then heating or treating the surface through plasma ashing. The outermost surface of the substrate has (sub-)micron irregularities. The surface is covered with a layer containing fluorocarbon and siloxane groups formed from the mixture of a completely hydrolysable silane and a perfluoroalkyl alkyl silane through a dehydrochlorination or dealcoholisation reaction.

FILE SEGMENT:

CPI

MANUAL CODE:

CPI: A06-A00E1; A12-B01C; E05-E02; E05-E03;
E31-P03; E31-P06B; E31-P06E; G02-A01A; L03-A

March 21, 2010

10/534,560

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ACCESSION NUMBER: 1998-313596 [28] WPIX
 DOC. NO. CPI: C1998-096784 [28]
 DOC. NO. NON-CPI: N1998-245790 [28]
 TITLE: Water-alcohol-based fluoro:alkyl-functional
 silicone composition - obtained by hydrolytic
 condensation of a mixture of amino:alkyl-,
 fluoro:alkyl- and other organo-silane compounds
 DERWENT CLASS: A26; A82; A87; E11; F06; G02; P42; Q43
 INVENTOR: EDELMANN R; FRINGS A; FRINGS A J; HORN M; JENKNER
 P; LAVEN R; MACK H; MONKIEWICZ J; STANDKE B
 PATENT ASSIGNEE: (DEGS-C) DEGUSSA-HUELS AG; (CHEM-C) HUELS AG;
 (DEGS-C) DEGUSSA AG
 COUNTRY COUNT: 21

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
DE 19649955	A1	19980604	(199828)*	DE	8[0]	
<--						
EP 846716	A2	19980610	(199828)	DE		
<--						
JP 10158520	A	19980616	(199834)	JA	9	
<--						
US 5849942	A	19981215	(199906)	EN		
<--						
US 5863509	A	19990126	(199911)	EN		
<--						
KR 98063669	A	19981007	(199949)	KO	[0]	
<--						
EP 846716	B1	20000126	(200010)	DE		
<--						
DE 59701063	G	20000302	(200018)	DE		
<--						
ES 2143278	T3	20000501	(200028)	ES		
<--						
US 6228936	B1	20010508	(200128)	EN		
<--						
KR 548657	B1	20060711	(200728)	KO	[0]	

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
DE 19649955 A1		DE 1996-19649955	
19961203			
JP 10158520 A		JP 1997-229089	
19970826			
DE 59701063 G		DE 1997-501063	
19971011			
EP 846716 A2		EP 1997-117644	
19971011			
EP 846716 B1		EP 1997-117644	
19971011			
DE 59701063 G		EP 1997-117644	
19971011			
ES 2143278 T3		EP 1997-117644	
19971011			
KR 98063669 A		KR 1997-65123 19971202	
US 5849942 A		US 1997-984163	

19971203	
US 5863509 A Div Ex	US 1997-984163
19971203	
US 6228936 B1 Div Ex	US 1997-984163
19971203	
US 5863509 A	US 1998-94501 19980610
US 6228936 B1 Cont of	US 1998-94501 19980610
US 6228936 B1	US 1999-228641
19990112	
KR 548657 B1	KR 1997-65123 19971202

FILING DETAILS:

PATENT NO	KIND	PATENT NO
DE 59701063	G Based on	EP 846716 A
ES 2143278	T3 Based on	EP 846716 A
US 6228936	B1 Div ex	US 5849942 A
US 6228936	B1 Cont of	US 5863509 A
KR 548657	B1 Previous Publ	KR 9863669 A

PRIORITY APPLN. INFO: DE 1996-19649955 19961203

INT. PATENT CLASSIF.:

MAIN: C08G077-24; C08L083-08

SECONDARY: ~~C09D183-08~~; D06M015-657

IPC ORIGINAL: C08L0083-00 [I,C]; C08L0083-04 [I,A]; C08L0083-04 [I,C]; C08L0083-08 [I,A]

IPC RECLASSIF.: C03C0017-28 [I,C]; C03C0017-30 [I,A]; C03C0025-24 [I,C]; C03C0025-40 [I,A]; C04B0041-45 [I,C]; C04B0041-49 [I,A]; C08G0077-00 [I,C]; C08G0077-22 [I,A]; C08G0077-24 [I,A]; C08G0077-26 [I,A]; C08L0083-00 [I,C]; C08L0083-08 [I,A]; ~~C09D0183-08~~ [I,A]; ~~C09D0183-08~~ [I,C]; C09D0005-00 [I,A]; C09D0005-00 [I,C]; C09K0003-00 [I,A]; C09K0003-00 [I,C]; C09K0003-18 [I,A]; C09K0003-18 [I,C]; C14C0009-00 [I,A]; C14C0009-00 [I,C]; C23C0030-00 [I,A]; C23C0030-00 [I,C]; D06M0015-37 [I,C]; D06M0015-657 [I,A]

ECLA: C03C0017-30; C03C0025-40; C04B0041-49B6D; C08G0077-22; C08G0077-24; C08G0077-26; C09D0183-08; C09K0003-18; C14C0009-00; C23C0030-00; D06M0015-657

ICO: N06M0101:06

USCLASS NCLM: 422/221.000

NCLS: 427/221.000; 427/387.000; 427/389.800; 427/393.600; 428/447.000; 524/588.000; 528/042.000; 556/424.000; 556/425.000

JAP. PATENT CLASSIF.:

MAIN/SEC.: C08L0083-08; C09D0005-00 Z; C09K0003-00 112 F; C09K0003-18 104

FTerm CLASSIF.:

4H016; 4H020; 4J002; 4J038; 4H020/AA03; 4H020/AB02; 4H020/BA36; 4J002/CP03.1; 4J002/CP08.1; 4J002/CP09.1; 4J002/DE02.6; 4J038/DL07.1; 4J002/EC03.7; 4J038/GA12; 4J038/GA15; 4J002/GH01; 4J002/GH02; 4J038/HA09.6; 4J038/HA15.6; 4J038/HA33.6; 4J038/JA17; 4J038/JA37; 4J038/NA05; 4J038/NA06; 4J038/PB05

BASIC ABSTRACT:

DE 19649955 A1 UPAB: 20050704 Water/alcohol-based, fluoroalkyl-functional compositions containing organo-polysiloxanes of formula RO[Si(A)(CH₃)₂(OR)]_{1-z}O]a[Si(B)(R₂)_y(OR)]_{1-y}O]b[Si(C)(CH₃)O]c[Si(D)(OR)]_dR.(HX)_e(I); (where A =

amino-alkyl group derived from formula $\text{H}_2\text{N}(\text{CH}_2)_f(\text{NH})_g(\text{CH}_2)_h\text{-Si}(\text{CH}_3)_2(\text{OR})_{3-z}$ (II); R = linear, branched or cyclic 1-8C alkyl, or aryl; $f = 0-6$; $g = 0$ if $f = 0$, or $g = 1$ if $f = \text{more than } 0$; $h = 0-6$; $z = 0-1$; B = fluoroalkyl group derived from formula $\text{R}_1\text{-Y}-(\text{CH}_2)_2\text{-Si}(\text{R}_2)_y(\text{OR})_{3-y}$ (III); $\text{R}_1 = \text{mono-}, \text{oligo- or per- fluorinated } 1-9\text{C alkyl or aryl}$; Y = CH_2 , O or S; $\text{R}_2 = \text{as for R}$; $y = 0-1$; C = alkyl group derived from formula $\text{R}_3\text{-Si}(\text{CH}_3)(\text{OR})_2$ (IV); D = alkyl group derived from $\text{R}_3\text{Si}(\text{OR})_3$ (V); $\text{R}_3 = \text{linear, branched or cyclic } 1-8\text{C alkyl}$; X = residue of inorganic or organic acid; a, b = more than 0; c, d, e = 0 or more; $a + b + c + d = \text{at least } 2$). Also claimed is a process for the production of these compositions.

Preferably the composition has a pH of 1-8 and may contain monobasic inorganic and/or organic acids and/or secondary products thereof. The free alcohol content is 3-50 wt% and the content of fluoroalkyl-functional active substance is 0.005-85 wt%. These compositions produce a waterproofing and oil-proofing effect. The compositions are obtained by the process described above. The organosilanes used are co-condensed with 0.5-30 mols water per mol organosilane, preferably using a monobasic acid. Reaction is carried out at 0-100°C. The product obtained may be further purified by sedimentation and/or filtration.

USE - For the simultaneous waterproofing and oil-proofing, and for dirt-repellent and paint-repellent treatment, of surfaces, ~~metals~~, plastics, mineral building materials, textiles, leather, and cellulose and starch products, for the protection of buildings and facades, for coating glass fibres, for silanising fillers and pigments, for improving the rheological properties of polymer dispersions and emulsions, and as release agents, crosslinkers, coupling agents and additives for paint and varnish (claimed).

ADVANTAGE - Provides water-based silicone compositions containing silicon-linked fluoroalkyl groups and other functionalities, which are applied to surfaces by a simple process to produce simultaneous water- and oil-proofing effects.

DOCUMENTATION ABSTRACT:

DE19649955

Water/alcohol-based, fluoroalkyl-functional compositions containing organo-~~polysiloxanes~~ of formula

$\text{RO}[\text{Si}(\text{A})(\text{CH}_3)_2(\text{OR})_{1-z}]\text{a}[\text{Si}(\text{B})(\text{R}_2)_y(\text{OR})_{1-y}]\text{O}[\text{Si}(\text{C})(\text{CH}_3)_2]\text{c}[\text{Si}(\text{D})(\text{OR})_2]\text{dR}(\text{HX})_e$ (I);

A = amino-alkyl group derived from formula

$\text{H}_2\text{N}(\text{CH}_2)_f(\text{NH})_g(\text{CH}_2)_h\text{-Si}(\text{CH}_3)_2(\text{OR})_{3-z}$ (II);

R = linear, branched or cyclic 1-8C alkyl, or aryl;

$f = 0-6$;

$g = 0$ if $f = 0$, or $g = 1$ if $f = \text{more than } 0$;

$h = 0-6$;

$z = 0-1$;

B = fluoroalkyl group derived from formula

$\text{R}_1\text{-Y}-(\text{CH}_2)_2\text{-Si}(\text{R}_2)_y(\text{OR})_{3-y}$ (III);

$\text{R}_1 = \text{mono-}, \text{oligo- or per- fluorinated } 1-9\text{C alkyl or aryl}$;

Y = CH_2 , O or S;

$\text{R}_2 = \text{as for R}$;

$y = 0-1$;

C = alkyl group derived from formula $\text{R}_3\text{-Si}(\text{CH}_3)(\text{OR})_2$ (IV);

D = alkyl group derived from $\text{R}_3\text{Si}(\text{OR})_3$ (V);

$\text{R}_3 = \text{linear, branched or cyclic } 1-8\text{C alkyl}$;

X = residue of inorganic or organic acid;

a, b = more than 0;

c, d, e = 0 or more;

$a + b + c + d = \text{at least } 2$.

Also claimed is a process for the production of these compositions.

USE

For the simultaneous waterproofing and oil-proofing, and for dirt-repellent and paint-repellent treatment, of surfaces, metals, plastics, mineral building materials, textiles, leather, and cellulose and starch products, for the protection of buildings and facades, for coating glass fibres, for silanising fillers and pigments, for improving the rheological properties of polymer dispersions and emulsions, and as release agents, crosslinkers, coupling agents and additives for paint and varnish (claimed).

ADVANTAGE

Provides water-based silicone compositions containing silicon-linked fluoroalkyl groups and other functionalities, which are applied to surfaces by a simple process to produce simultaneous water- and oil-proofing effects.

CLAIMED PROCESS

The production of these compositions comprises mixing a mols water-soluble organosilane (II), b mols (III), optionally c mols (IV) and/or optionally d mols (V) in a molar ratio of a/(b + c + d) = at least 0.1, mixing with water or a water/acid mixture or a water/acid/alcohol mixture to give a mixture with a pH of 1-8, reacting for 0.5-24 hrs. and then adjusting the concentration of active substance by adding alcohol, water or an alcohol/water mixture.

EXAMPLE

A mixture of 44.2 g 'Dynasylan 1203' (RTM: 3-aminopropyl-triethoxysilane) and 93.4 g 'VPS 8161' (RTM: tridecafluoro-1,1,2,2-tetrahydro-octyl-1-trimethoxysilane) was treated with 14.4 g water and stirred for 3 hrs. at 55-60°C, then the mixture was cooled to 30°C and treated over 10 mins. with 11.9 g formic acid (85%). The product obtained (1) was miscible in all proportions with water. Clay bricks, lime sand bricks and concrete bricks were cut into cubes with an edge length of 5 cm. These blocks were immersed for 5 mins. in preparation (1) which had been diluted with water to give a 0.5 wt% solution based on the fluoroalkyl-silane, and then dried at room temperature or in an oven at 120°C. The treated surfaces showed a very good repellent effect for water and oil (e.g. mineral oil, heating oil, silicone oil etc.), which were no longer able to penetrate into the blocks; untreated surfaces were immediately penetrated by both liquids.

PREFERRED COMPOSITION

The composition has a pH of 1-8 and may contain monobasic inorganic and/or organic acids and/or secondary products thereof. The free alcohol content is 3-50 wt% and the content of fluoroalkyl-functional active substance is 0.005-85 wt%. These compositions produce a waterproofing and oil-proofing effect. The compositions are obtained by the process described above.

PREFERRED PROCESS

The organosilanes used are co-condensed with 0.5-30 mols water per mol organosilane, preferably using a monobasic acid. Reaction is carried out at 0-100°C. The product obtained may be further purified by sedimentation and/or filtration.

FILE SEGMENT: CPI; GMPI
MANUAL CODE: CPI: A06-A00E1; A12-B01C; E05-E03; F01-H06;
G01-B03; G02-A03; G02-A05; G02-A05H

L29 ANSWER 10 OF 12 WPIX COPYRIGHT 2010 THOMSON REUTERS on STN
ACCESSION NUMBER: 1998-313595 [28] WPIX
DOC. NO. CPI: C1998-096783 [28]

March 21, 2010

10/534,560

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DOC. NO. NON-CPI: N1998-245789 [28]
 TITLE: Alcohol-based fluoroalkyl-functional silicone composition used for coating glass fibres, treating surfaces, etc. - is obtained by hydrolysis of fluoroalkyl-functional organo:silane compound with water in alcoholic medium in presence of weak acid and-or base
 DERWENT CLASS: A26; A82; A87; E11; F06; G02; P73; Q43
 INVENTOR: FRINGS A; FRINGS A J; HORN M; JENKNER P; JUST E; MONKIEWICZ J; STANDKE B
 PATENT ASSIGNEE: (DEGS-C) DEGUSSA AG; (DEGS-C) DEGUSSA-HUELS AG; (CHEM-C) HUELS AG
 COUNTRY COUNT: 21

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
DE 19649954	A1	19980604	(199828)*	DE	5[0]	
<--						
EP 846715	A2	19980610	(199828)	DE		
<--						
JP 10158521	A	19980616	(199834)	JA	7	
<--						
KR 98063670	A	19981007	(199949)	KO	[0]	
<--						
EP 846715	B1	20000209	(200012)	DE		
<--						
DE 59701107	G	20000316	(200021)	DE		
<--						
ES 2143827	T3	20000516	(200031)	ES		
<--						
US 6177582	B1	20010123	(200107)	EN		
<--						
EP 846715	B2	20031203	(200403)	DE		
<--						
US 6713186	B1	20040330	(200423)	EN		
KR 548658	B1	20060628	(200915)	KO	[0]	

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
DE 19649954 A1		DE 1996-19649954	
19961203			
JP 10158521 A		JP 1997-229241	
19970826			
DE 59701107 G		DE 1997-59701107	
19971011			
EP 846715 A2		EP 1997-117643	
19971011			
EP 846715 B1		EP 1997-117643	
19971011			
DE 59701107 G		EP 1997-117643	
19971011			
ES 2143827 T3		EP 1997-117643	
19971011			
EP 846715 B2		EP 1997-117643	
19971011			

KR 98063670 A	KR 1997-65124 19971202
US 6177582 B1	US 1997-984162
19971203	
US 6713186 B1 Div Ex	US 1997-984162
19971203	
US 6713186 B1	US 2000-685341
20001011	
KR 548658 B1	KR 1997-65124 19971202

FILING DETAILS:

PATENT NO	KIND	PATENT NO
DE 59701107	G Based on	EP 846715 A
ES 2143827	T3 Based on	EP 846715 A
KR 548658	B1 Previous Publ	KR 9863670 A

PRIORITY APPLN. INFO: DE 1996-19649954 19961203

INT. PATENT CLASSIF.:

MAIN: C08G077-24; C08L083-08
 SECONDARY: C09D183-08; D06M015-657
 IPC ORIGINAL: C08L0083-00 [I,C]; C08L0083-08 [I,A]
 IPC RECLASSIF.: C03C0025-24 [I,C]; C03C0025-40 [I,A]; C08G0077-00 [I,C]; C08G0077-24 [I,A]; C08L0083-00 [I,C]; C08L0083-08 [I,A]; C09D0183-08 [I,A]; C09D0183-08 [I,C]; C09K0003-18 [I,A]; C09K0003-18 [I,C]; D06M0013-00 [I,C]; D06M0013-513 [I,A]; D06M0015-37 [I,C]; D06M0015-657 [I,A]; D21H0019-00 [I,C]; D21H0019-32 [I,A]; D21H0021-14 [N,C]; D21H0021-16 [N,A]
 ECLA: C03C0025-40; C08G0077-24; C09D0183-08; C09K0003-18; D06M0013-513; D06M0015-657; D21H0019-32
 ICO: N21H0021:16
 USCLASS NCLM: 428/447.000
 NCLS: 528/021.000; 528/042.000
 JAP. PATENT CLASSIF.:
 MAIN/SEC.: C08L0083-08; C09D0183-08
 FTERM CLASSIF.: 4J002; 4J038; 4J002/CP08.1; 4J002/DE02.8; 4J002/DE07.6; 4J002/DE22.6; 4J002/DH04.6; 4J038/DL07.1; 4J002/EC03.7; 4J002/EE03.6; 4J002/EF06.6; 4J002/EG02.6; 4J002/EG04.6; 4J002/EN02.6; 4J002/EX07.6; 4J002/FD20.6; 4J002/GH00; 4J002/GK02; 4J002/GT00; 4J038/HA21.6; 4J038/HA23.6; 4J038/HA24.6; 4J038/JA19; 4J038/JA26; 4J038/JA37; 4J038/JA47; 4J038/JC32; 4J038/KA06; 4J038/LA02; 4J038/MA15; 4J038/NA07; 4J038/PB05; 4J038/PC02; 4J038/PC03; 4J038/PC08

BASIC ABSTRACT:

DE 19649954 A1 UPAB: 20050704 Alcohol-based, fluoroalkyl-functional organosiloxane-containing compositions are obtained by hydrolysis of fluoroalkyl-organosilanes of formula $R_1-Y-(CH_2)_2SiH_x(R_2)_y(OR)_3-x-y$ (I), where R, R₂ = linear, branched or cyclic 1-8C alkyl, or aryl; R₁ = mono-, oligo- or per-fluorinated 1-9C alkyl or aryl; Y = CH₂, O or S; x, y = 0, 1 or 2; and x+y = not more than 2. The reaction is carried out for 0.5-24 hours at 0-120° C with good stirring in an alcoholic medium containing water together with a weak mono- or poly-basic acid and/or a weak base or an acid or basic salt, with a molar ratio of water:(I) = (2-500):1. Also claimed is the above process for the production of these compositions.

USE - Used for the simultaneous waterproofing and oil-proofing, and for dirt-repellent and paint-repellent treatment, of surfaces, metals, plastics,

mineral building materials, textiles, leather, and cellulose and starch products, for the protection of buildings and facades, for coating glass fibres, for silanising fillers and pigments, for improving the rheological properties of polymer dispersions and emulsions, and as release agents, crosslinkers, coupling agents and additives for paint and varnish (claimed). ADVANTAGE - Chlorine-free, silane-based compositions with good long-term storage stability, are obtained by a simple, economical process. These compositions are applied to surfaces by a simple process to produce simultaneous water- and oil- proofing effects.

DOCUMENTATION ABSTRACT:

DE19649954

Alcohol-based, fluoroalkyl-functional organosiloxane-containing compositions are obtained by hydrolysis of fluoroalkyl-organosilanes of formula (I):

$$R_1 - Y - (CH_2)_x - SiH_y - (R_2)_y \quad (OR)_3 - x - y \quad (I)$$

R₁, R₂ = linear, branched or cyclic 1-8C alkyl, or aryl;

R₁ = mono-, oligo- or per- fluorinated 1-9C alkyl or aryl;

Y = CH₂, O or S;

x, y = 0, 1 or 2; and

x+y = not more than 2.

The reaction is carried out for 0.5-24 hours at 0-120° C with good stirring in an alcoholic medium containing water together with a weak mono- or poly-basic acid and/or a weak base or an acid or basic salt, with a molar ratio of water:(I) = (2-500):1.

Also claimed is the above process for the production of these compositions.

USE

Used for the simultaneous waterproofing and oil-proofing, and for dirt-repellent and paint-repellent treatment, of surfaces, metals, plastics, mineral building materials, textiles, leather, and cellulose and starch products, for the protection of buildings and facades, for coating glass fibres, for silanising fillers and pigments, for improving the rheological properties of polymer dispersions and emulsions, and as release agents, crosslinkers, coupling agents and additives for paint and varnish (claimed).

ADVANTAGE

Chlorine-free, silane-based compositions with good long-term storage stability, are obtained by a simple, economical process. These compositions are applied to surfaces by a simple process to produce simultaneous water- and oil- proofing effects.

EXAMPLE

A mixture of 10 g water, 5 g formic acid and 160 g ethanol (pH 3.5-4) was treated with 10 g 'VPS 8261' (RTM: 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluoro-1,1,2,2-tetrahydro-octyl-triethoxysilane) and then stirred for 5 hours, after which the mixture was made up to a total weight of 1000 g with 915 g ethanol. The product was a clear, colourless solution containing 1.0 wt% 'VPS 8261' (RTM), with a storage stability of at least 6 months. This solution was tested as a coating on glass, steel, Al foil, copper, cardboard boxes, paper and polyester, and for impregnating wood, leather and cotton, by immersing the substrate in the solution for 5 minutes and then drying in an oven for 30 minutes at 120° C.

The treated samples showed significant water repellent properties and oil repellent properties (heating oil and silicone oil), a wetting angle of more than 100°, and good anti-graffiti, anti-soiling and anti-fouling properties. These

properties were unaffected after several months in daylight at room temperature with varying moisture levels. (IS)

PREFERRED COMPOSITION

The composition has a pH of 2-12, a viscosity of less than 10,000 mPa.s, an alcohol content of 40-99.999 weight% and a fluoroalkyl-functional organosiloxane content of 0.001-30 wt%, and is essentially chlorine-free.

PREFERRED PROCESS

The reaction medium is adjusted to pH 2-12. Suitable weak bases are silanes of formula (II) or alkyl-amines of formula (III):
$$\text{H}_2\text{N}(\text{CH}_2)_f(\text{NH})_g(\text{CH}_2)_h\text{-Si}(\text{CH}_3)_i(\text{OR})_{3-i} \quad (\text{II})$$

R = as above;

f = 0-6;

g = 0 if f = 0, or g = 1 if f = more than 1;

h = 0-6; and

i = 0-1.

$\text{H}_{3-z}\text{NR}_{3z} \quad (\text{III})$

R = linear, branched or cyclic 1-8C alkyl or aminoalkyl, or aryl; and

z = 1, 2 or 3.

PREFERRED REAGENTS

Other suitable reagents are formic, acetic, propionic or citric acid (weak acids), alkali hydrogen sulphates or dihydrogen phosphates or aluminium acetate (acid salts), and magnesium hydroxide or alkali acetate, carbonate or hydrogen carbonate (basic salts).

The preferred reaction medium is an alcohol corresponding to the alkoxy groups in (I), especially methanol, ethanol, n- or iso-propanol, n-, iso- or tert.-butanol and/or 2-methoxyethanol.

FILE SEGMENT: CPI; GMPI

MANUAL CODE: CPI: A06-A00E1; A12-B01C; E05-E; F01-H06; G01-B03; G02-A03; G02-A05; G02-A05H

L29 ANSWER 11 OF 12 WPIX COPYRIGHT 2010 THOMSON REUTERS on STN

ACCESSION NUMBER: 1998-313594 [28] WPIX

DOC. NO. CPI: C1998-096782 [28]

TITLE: Water-based organo-polysiloxane compositions for water- and oil-proofing - are obtained by hydrolytic condensation of a mixture of aminoalkyl-, fluoroalkyl- and other organo-silane compounds followed by distillation of alcohol

DERWENT CLASS: A26; A82; A87; E11; F06; G02

INVENTOR: EDELMANN R; FRINGS A; FRINGS A J; HORN M; JENKNER P; LAVEN R; MACK H; MONKIEWICZ J; STANDKE B

PATENT ASSIGNEE: (DEGS-C) DEGUSSA-HUELS AG; (CHEM-C) HUELS AG; (DEGS-C) DEGUSSA AG

COUNTRY COUNT: 21

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
DE 19649953	A1	19980604	(199828)*	DE	10[0]	
<--						
EP 846717	A2	19980610	(199828)	DE		
<--						
JP 10158522	A	19980616	(199834)	JA	11	
<--						
US 5808125	A	19980915	(199844)	EN		
<--						

March 21, 2010

10/534,560

35

KR 98063668	A	19981007 (199949)	KO	[0]
<--				
US 6054601	A	20000425 (200027)	EN	
<--				
EP 846717	B1	20010103 (200102)	DE	
<--				
DE 59702852	G	20010208 (200109)	DE	
<--				
ES 2154009	T3	20010316 (200123)	ES	
<--				
US 6288256	B1	20010911 (200154)	EN	
<--				
KR 548655	B1	20060818 (200714)	KO	

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
DE 19649953 A1		DE 1996-19649953	
19961203			
JP 10158522 A		JP 1997-229246	
19970826			
DE 59702852 G		DE 1997-502852	
19971011			
EP 846717 A2		EP 1997-117645	
19971011			
EP 846717 B1		EP 1997-117645	
19971011			
DE 59702852 G		EP 1997-117645	
19971011			
ES 2154009 T3		EP 1997-117645	
19971011			
KR 98063668 A		KR 1997-65122 19971202	
US 5808125 A		US 1997-984094	
19971203			
US 6054601 A Div Ex		US 1997-984094	
19971203			
US 6288256 B1 Div Ex		US 1997-984094	
19971203			
US 6054601 A		US 1998-93681 19980609	
US 6288256 B1 Cont of		US 1998-93681 19980609	
US 6288256 B1		US 1999-229124	
19990112			
KR 548655 B1		KR 1997-65122 19971202	

FILING DETAILS:

PATENT NO	KIND		PATENT NO	
DE 59702852	G	Based on	EP 846717	A
ES 2154009	T3	Based on	EP 846717	A
US 6054601	A	Div ex	US 5808125	A
US 6288256	B1	Div ex	US 5808125	A
US 6288256	B1	Cont of	US 6054601	A
KR 548655	B1	Previous Publ	KR 9863668	A

PRIORITY APPLN. INFO: DE 1996-19649953 19961203

INT. PATENT CLASSIF.:

MAIN: C08G077-26; C08L083-04
 SECONDARY: C08G077-24; C09D183-08

IPC ORIGINAL: C08L0083-00 [I,C]; C08L0083-04 [I,A]; C08L0083-08 [I,A]; C08L0083-08 [I,C]

IPC RECLASSIF.: B27K0003-02 [I,C]; B27K0003-15 [I,A]; C03C0017-28 [I,C]; C03C0017-30 [I,A]; C04B0041-45 [I,C]; C04B0041-49 [I,A]; C04B0041-60 [I,C]; C04B0041-64 [I,A]; C04B0041-82 [I,C]; C04B0041-84 [I,A]; C08G0077-00 [I,C]; C08G0077-24 [I,A]; C08G0077-26 [I,A]; C08L0083-00 [I,C]; C08L0083-08 [I,A]; C09D0183-08 [I,A]; C09D0183-08 [I,C]; C09K0003-18 [I,A]; C09K0003-18 [I,C]; C23C0030-00 [I,A]; C23C0030-00 [I,C]; D06M0015-37 [I,C]; D06M0015-643 [I,A]; D06M0015-657 [I,A]; D21H0017-00 [I,C]; D21H0017-59 [I,A]; D21H0021-14 [N,C]; D21H0021-16 [N,A]

ECLA: B27K0003-15; C03C0017-30; C04B0041-49B6D; C04B0041-64; C04B0041-84; C08G0077-24; C08G0077-26; C09D0183-08; C09K0003-18; C23C0030-00; D06M0015-643D; D06M0015-657; D21H0017-59

ICO: N06M0101:06; N21H0021:16

USCLASS NCLM: 556/424.000

NCLS: 106/287.100; 106/287.110; 106/287.120; 106/287.160; 106/287.340; 252/008.810; 252/008.910; 428/141.000; 428/143.000; 428/144.000; 428/145.000; 428/147.000; 428/297.400; 428/299.400; 428/299.700; 428/313.900; 428/543.000; 556/424.000; 556/425.000

JAP. PATENT CLASSIF.: MAIN/SEC.: C08L0083-08; C09D0183-08

FTERM CLASSIF.: 4J002; 4J038; 4J002/BD15.5; 4J038/CD12.2; 4J002/CP05.1; 4J002/CP08.1; 4J002/CP09.1; 4J002/CP10.1; 4J002/DD01.7; 4J002/DD05.8; 4J002/DE02.6; 4J002/DF02.7; 4J002/DF02.8; 4J038/DL05.1; 4J038/DL07.1; 4J038/DL08.1; 4J038/DL09.1; 4J002/EC03.9; 4J002/EF03.7; 4J002/EG02.8; 4J002/FD09.0; 4J002/FD14.0; 4J002/FD16.0; 4J002/GH02; 4J002/HA04; 4J038/HA09.6; 4J038/HA11.6; 4J038/HA15.6; 4J038/HA32.6; 4J038/JA19; 4J038/JA37; 4J038/JA45; 4J038/KA06; 4J038/KA09; 4J038/LA02; 4J038/LA06; 4J038/MA10; 4J038/NA07; 4J038/PB05; 4J038/PC02; 4J038/PC03; 4J038/PC04; 4J038/PC08

BASIC ABSTRACT:

DE 19649953 A1 UPAB: 20060114 Water-based, organopolysiloxane-containing compositions, which are largely free from organic solvent, show a flash point of above 70° C and do not release alcohol when diluted with water. These compositions contain polysiloxanes of formula $\text{HO}[\text{Si}(\text{A})(\text{CH}_3)_z(\text{OH})_{1-z}]\text{a}[\text{Si}(\text{B})(\text{R}_2)_y(\text{OH})_{1-y}]\text{b}[\text{Si}(\text{C})(\text{CH}_3)_x]\text{c}[\text{Si}(\text{D})(\text{OH})_4]\text{dH} \cdot (\text{HX})_e$ (I), where A = amino-alkyl group derived from formula $\text{H}_2\text{N}(\text{CH}_2)_f(\text{NH})_g(\text{CH}_2)_h\text{Si}(\text{OR})_{3-z}(\text{CH}_3)_z$ (II); R = linear, branched or cyclic 1-8C alkyl, or aryl; f = 0-6; g = 0 if f = 0, or g = 1 if f = more than 0; h = 0-6; z = 0-1; B = fluoroalkyl group derived from formula $\text{R}_1\text{-Y}-(\text{CH}_2)_2\text{Si}(\text{R}_2)_y(\text{OR})_{3-y}$ (III); R₁ = mono-, oligo- or per- fluorinated 1-9C alkyl or aryl; Y = CH₂, O or S; R₂ = as for R; y = 0-1; C = alkyl group derived from formula $\text{R}_3\text{-Si}(\text{CH}_3)(\text{OR})_2$ (IV); D = alkyl group derived from $\text{R}_3\text{-Si}(\text{OR})_3$ (V); R₃ = linear, branched or cyclic 1-8C alkyl; X = residue of (in)organic acid; a, b = more than 0; c, d, e = 0 or more; and a+b+c+d = at least 2.

Also claimed is a process for the production of these compositions.

USE - Used for the simultaneous waterproofing and oil-proofing, and for dirt-repellent and paint-repellent treatment, of surfaces, metals, plastics, mineral building materials, textiles, leather, and cellulose and starch products, for the protection of buildings and facades, for coating glass

fibres, for silanising fillers and pigments, for improving the rheological properties of polymer dispersions and emulsions, and as release agents, crosslinkers, coupling agents and additives for paint and varnish (claimed).
 ADVANTAGE - Provides solvent-free, water-based silicone compositions containing silicon-linked fluoroalkyl groups and other functionalities, obtained by a simple, economical process in the form of clear, homogeneous solutions with a storage stability of several weeks.

DOCUMENTATION ABSTRACT:

DE19649953

Water-based, organopolysiloxane-containing compositions, which are largely free from organic solvent, show a flash point of above 70° C and do not release alcohol when diluted with water. These compositions contain polysiloxanes of formula

$$\text{HO}[\text{Si}(\text{A})(\text{CH}_3)_z(\text{OH})_{1-z}]\text{a}[\text{Si}(\text{B})(\text{R}_2)_y(\text{OH})_{1-y}]\text{b}-$$

$$[\text{Si}(\text{C})(\text{CH}_3)_z]\text{c}[\text{Si}(\text{D})(\text{OH})_2]\text{dH} \cdot (\text{HX})_e \quad (\text{I})$$

A = amino-alkyl group derived from formula (II):

$$\text{H}_2\text{N}(\text{CH}_2)_f(\text{NH})_g(\text{CH}_2)_h\text{Si}(\text{OR})_{3-z}(\text{CH}_3)_z \quad (\text{II})$$

R = linear, branched or cyclic 1-8C alkyl, or aryl;

f = 0-6;

g = 0 if f = 0, or g = 1 if f = more than 0;

h = 0-6;

z = 0-1;

B = fluoroalkyl group derived from formula (III):

$$\text{R}_1\text{-Y}-(\text{CH}_2)_2\text{Si}(\text{R}_2)_y(\text{OR})_{3-y} \quad (\text{III})$$

R₁ = mono-, oligo- or per- fluorinated 1-9C alkyl or aryl;

Y = CH₂, O or S;

R₂ = as for R;

y = 0-1;

C = alkyl group derived from formula (IV):

$$\text{R}_3\text{-Si}(\text{CH}_3)(\text{OR})_2 \quad (\text{IV})$$

D = alkyl group derived from formula (V):

$$\text{R}_3\text{-Si}(\text{OR})_3 \quad (\text{V})$$

R₃ = linear, branched or cyclic 1-8C alkyl;

X = residue of (in)organic acid;

a, b = more than 0;

c, d, e = 0 or more; and

a+b+c+d = at least 2.

Also claimed is a process for the production of these compositions.

USE

Used for the simultaneous waterproofing and oil-proofing, and for dirt-repellent and paint-repellent treatment, of surfaces, metals, plastics, mineral building materials, textiles, leather, and cellulose and starch products, for the protection of buildings and facades, for coating glass fibres, for silanising fillers and pigments, for improving the rheological properties of polymer dispersions and emulsions, and as release agents, crosslinkers, coupling agents and additives for paint and varnish (claimed).

ADVANTAGE

Provides solvent-free, water-based silicone compositions containing silicon-linked fluoroalkyl groups and other functionalities, obtained by a simple, economical process in the form of clear, homogeneous solutions with a storage stability of several weeks.

CLAIMED PROCESS

The production of these compositions comprises mixing a mols

water-soluble organosilane (II), b mols (III), optionally c mols (IV) and/or optionally d mols (V) in a molar ratio of $a/(b+c+d) =$ at least 0.1, mixing with water or a water/acid mixture or a water/acid/alcohol mixture to give a mixture with a pH of 1-8, and then removing any alcohol already present or formed in the reaction.

EXAMPLE

A mixture of 14.2 g 'Dynasylan 1203' (RTM: 3-aminopropyl-triethoxysilane) and 10.0 g 'VPS 8161' (RTM: tridecafluoro-1,1,2,2-tetrahydro-octyl-1-trimethoxysilane) was treated with 3.1 g water and stirred for 3 hours at 50° C, then a mixture of 220 g water and 4.2 g formic acid (84%) was added over 5 minutes, after which an ethanol/methanol/water mixture was removed by distillation for 2 hours at 30-48° C and 150-133 mbar. When the head temperature reached 50° C and the distillate contained water only, distillation was stopped and the product (1) was diluted to 1000 g with water.

Clay bricks, lime sand bricks and concrete bricks were cut into cubes with an edge length of 5 cm, which were immersed for 5 minutes in preparation (1) and then dried at room temperature or in an oven at 120° C. The treated surface showed a very good repellent effect for water and oil, which were no longer able to penetrate into the blocks. Untreated surfaces were immediately penetrated by both liquids.

PREFERRED COMPOSITION

The composition has a pH of 1-8 and may contain monobasic inorganic and/or organic acids and/or secondary products thereof. The alcohol content is less than 5 weight% and the content of organopolysiloxanes as active substance is 0.005-60 weight%. The composition may also contain a silicone resin suspension. These compositions produce a waterproofing and oil-proofing effect. The compositions are obtained by the process described above.

PREFERRED PROCESS

The organosilanes used are co-condensed with 0.5-30 mols water per mol silane, preferably using a monobasic acid. The reaction is carried out at 0-100° C. Alcohol is removed by distillation with simultaneous replacement by the addition of water, preferably by distillation under reduced pressure and with the addition of a foam suppressant, until the temperature at the top of the column reaches the b.pt. of water and the alcohol content is less than 5 weight%. After removing alcohol, the product may be further purified by sedimentation and/or filtration.

FILE SEGMENT: CPI
MANUAL CODE: CPI: A06-A00E1; A12-B01C; E05-E; F01-H06; G01-B03;
G02-A03; G02-A05; G02-A05H

L29 ANSWER 12 OF 12 WPIX COPYRIGHT 2010 THOMSON REUTERS on STN
ACCESSION NUMBER: 1996-097107 [10] WPIX
CROSS REFERENCE: 1995-098164
DOC. NO. CPI: C1996-031371 [10]
DOC. NO. NON-CPI: N1996-081087 [10]
TITLE: Curable silicone coating compsn. having
good release properties - comprising
organo:silicon cpd. organo:hydrogen:silicon cpd.,
platinum gp. metal-containing catalyst and
silicone resin
DERWENT CLASS: A26; A82; G02; P42; P73; X12
INVENTOR: CARPENTER L E; EKELAND R A
PATENT ASSIGNEE: (DOWO-C) DOW CORNING CORP
COUNTRY COUNT: 5

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
US 5486578	A	19960123	(199610)*	EN	13[1]	
<--						
EP 718344	A1	19960626	(199630)	EN	15[1]	
<--						
JP 08218035	A	19960827	(199644)	JA	14[0]	
<--						

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 5486578 A CIP of		US 1993-175830	
19931230			
US 5486578 A		US 1994-359311	
19941220			
EP 718344 A1		EP 1995-303458	
19950523			
JP 08218035 A		JP 1995-301255	
19951120			

FILING DETAILS:

PATENT NO	KIND	PATENT NO
US 5486578 A	CIP of	US 5391673 A

PRIORITY APPLN. INFO: US 1994-359311 19941220
 US 1993-175830 19931230

INT. PATENT CLASSIF.:

IPC RECLASSIF.: B05D0007-24 [I,A]; B05D0007-24 [I,C]; B32B0027-00 [I,A]; B32B0027-00 [I,C]; B32B0027-18 [I,A]; B32B0027-18 [I,C]; C08G0077-00 [I,C]; C08G0077-04 [I,A]; C08G0077-06 [I,A]; C09D0183-04 [I,A]; C09D0183-04 [I,C]; C09D0183-05 [I,A]; C09D0183-05 [I,C]; C09D0183-07 [I,A]; C09D0183-07 [I,C]; C09D0183-08 [I,A]; C09D0183-08 [I,C]

ECLA: C08G0077-04; C08G0077-06; C09D0183-04+B4S; C09D0183-04+B4S+C8

JAP. PATENT CLASSIF.:

MAIN/SEC.: B05D0007-24 302 Y; B32B0027-00 101; B32B0027-18 Z; C09D0183-04; C09D0183-05; C09D0183-07 PMV; C09D0183-08

FTERM CLASSIF.:

4D075; 4F100; 4J038; 4F100/AH06.A; 4F100/AK52.A; 4F100/AR00.C; 4F100/AT00.B; 4F100/BA03; 4F100/BA07; 4D075/BB26.Y; 4D075/BB42.Y; 4D075/CA07; 4D075/DA04; 4D075/DB18; 4D075/DC27; 4J038/DL04.2; 4J038/DL05.2; 4J038/DL10.1; 4D075/EA05; 4D075/EA21; 4D075/EA35; 4D075/EB42; 4D075/EB52; 4D075/EC08; 4D075/EC30; 4D075/EC37; 4J038/HA06.6; 4J038/JC30; 4J038/JC32; 4F100/JL13.C; 4F100/JL14; 4J038/KA04; 4J038/NA10

BASIC ABSTRACT:

US 5486578 A UPAB: 20050511 A curable silicone coating compsn. comprises: (A) an organosilicon cpd. having at least two olefinic hydrocarbon radicals per cpd.; (B) at least one organohydrogensilicon cpd.; (C) a platinum gp.

metal-containing catalyst; and (D) a silicone resin prepared by: (I) mixing in a continuous manner a condensation catalyst and a silane selected from: (a) a silane of formula: SiX_4 wherein X = halogen atom or OR; R = 1-6C alkyl gps., aryl gp. and arylalkyl gps.; (b) alcohol treated halogenated silanes; and (c) alkyl silicates having units of formula: $\text{SiO}(4-d)/2(\text{OR}_1)_d$ or a partial hydrolysis condensate thereof, wherein R_1 = as R above; d = 1-3; (II) adding a quenching agent to the mixture of (I), whereby an aqueous layer or condensation catalyst layer and an organic-silicone resin containing layer are formed; (III) separating the aqueous layer or condensation catalyst layer from the organic-silicon resin containing layer; and (IV) stripping the organic-silicone resin containing layer; wherein the weight ratio of the silane to the condensation catalyst is constant throughout the process. Also claimed is preparing a laminate of a substrate and an adhesive wherein the adhesive will release from the substrate.

USE - These compsns. can be used to provide organosilicon articles such as O-rings, tubing, wire-coating, gaskets, encapsulant and sealant compsns. and as a coating compsn., partic. silicone release coatings.

ADVANTAGE - The silicone resin acts as a high release additive in curable silicone coatings and is effective in controlling the release forces in pressure sensitive adhesive laminate compsns. The coating is characterised by beneficial release properties and varying release speeds.

DOCUMENTATION ABSTRACT:

US5486578

A curable silicone coating compsn. comprises:

(A) an organosilicon cpd. having at least two olefinic hydrocarbon radicals per cpd.;

(B) at least one organohydrogensilicon cpd.;

(C) a platinum gp. metal-containing catalyst; and

(D) a silicone resin prepared by:

(I) mixing in a continuous manner a condensation catalyst and a silane selected from: (a) a silane of formula SiX_4 wherein X = halogen atom or OR; R = 1-6C alkyl gps., aryl gp. and arylalkyl gps.; (b) alcohol treated halogenated silanes; and (c) alkyl silicates having units of formula $\text{SiO}(4-d)/2(\text{OR}_1)_d$ or a partial hydrolysis condensate thereof, wherein R_1 = as R above; d = 1-3;

(II) adding a quenching agent to the mixture of (I), whereby an aqueous layer or condensation catalyst layer and an organic-silicone resin containing layer are formed;

(III) separating the aqueous layer or condensation catalyst layer from the organic-silicon resin containing layer; and

(IV) stripping the organic-silicone resin containing layer; wherein the weight ratio of the silane to the condensation catalyst is constant throughout the process.

Also claimed is preparing a laminate of a substrate and an adhesive wherein the adhesive will release from the substrate.

USE

These compsns. can be used to provide organosilicon articles such as O-rings, tubing, wire-coating, gaskets, encapsulant and sealant compsns. and as a coating compsn., partic. silicone release coatings.

ADVANTAGE

The silicone resin acts as a high release additive in curable silicone coatings and is effective in controlling the release forces in pressure sensitive adhesive laminate compsns. The coating is characterised by beneficial release properties and varying release speeds.

CLAIMED COMPOSITION

CLAIMED PROCESS

A curable silicone coating compsn. comprises:

(A), (B), (C) as above; and (D) a silicone resin prepared by: (I') mixing in a continuous manner a silane selected from: (i) alkoxy silanes, (ii) halogenated silanes, and (iii) alkyl silicates; with a silicon cpd. selected from: (iv) trialkylhalosilanes, and (v) disiloxanes; (II') adding an alcohol to the mixture of (I'); (III') adding water or a mixture of water and a condensation catalyst to the mixture of (II') whereby an aqueous layer and an organic-silicone resin containing layer are formed; (IV') separating the aqueous layer from the organic-silicone resin containing layer; (V') stripping the organic-silicone resin containing layer; wherein the weight ratio of silane to water or to the mixture of water and condensation catalyst is constant throughout the process.

Preparing a laminate of a substrate and an adhesive wherein the adhesive will release from the substrate comprises: (I') coating a curable silicone compsn. as above on the surface of the substrate; (II') exposing the coating and the substrate to an energy source selected from (i) heat and (ii) actinic radiation in an amount sufficient to cure the coating; and (III') applying a pressure sensitive adhesive on the coating.

EXAMPLE

Tetraethyl orthosilicate (1000g), tetramethyldivinylidisiloxane (50.8g) and hexamethyldisiloxane (309.6g) were charged to a first tank under nitrogen. Absolute ethanol (884g), concentrate HCl (257g) and water (689g) were charged to a second tank under nitrogen. The contents of the tanks were pumped together through static mixers and an age leg into an agitated reactor containing heptane (500g) at flow rates of 37.1 and 51.1 g/min., respectively. The age leg consisted of 12 feet of 1/4 inch OD Teflon tubing. When the addition was complete, the temperature was raised to 60 ° C and maintained for 2 hrs. The agitation was stopped and the aqueous layer was drained away.

The organic layer was washed free of residual acid with distilled water (3 x 250 ml), dried and stripped free of heptane solvent leaving a viscous resin (650g). The resin had a Mn of 1485, a Mw. of 2062, a polydispersity of 1.38 and a vinyl content of 2.5 weight%. This silicone resin was added to an organopolysiloxane. (ViMe₂SiO(Me₂SiO)_aSiMe₂Vi, degree of polymerisation 30) until the mixture reached a nominal viscosity of about 1000 centistokes (total added 70.9 weight%). A Pt catalyst (soluble Pt complex containing 0.67% Pt formed from chloroplatinic acid and divinyltetramethyldisiloxane; 1.85g) and bis(2-methoxy-1-methylethyl)maleate(1.05g) were added and the mixture stirred.

This mixture (40g) was added to a mixture (100g) of an organopolysiloxane (ViMe₂SiO(Me₂SiO)_aSiMe₂Vi, degree of polymerisation about 150, and 2 methylvinylsiloxyl units per chain; 100g) a Pt catalyst (as above; 1.85g) and bis(2-methoxy-1-methylethyl)maleate (1.05g). A trimethylsiloxyl-end-blocked-poly-dimethylsiloxane methylhydrogensiloxane copolymer (total average degree of polymerisation about 40, about 70 mol% methylhydrogen moiety on the siloxane chain at a ratio of 1.1:1 SiH to vinyl; 4g) was added and the mixture stirred. The compsn. was coated onto 54 lb. SCK paper at 1.0 lb. per ream coat weight in a blade over roll coater. The coating was immediately cured by passing the paper sheet through a 150 ° C oven for 30 secs. The coated sheets were aged overnight to allow

the paper to rehydrate and then laminated with a commercially available hot melt adhesive backed paper. The laminate was stored overnight and the release force determined by pulling 1' x 12' long strips at 12, 400 and 4000 in/min. and found to be 26.6g, 29.6g and 53.9g, respectively. A comparative example containing a MQ resin, synthesized from sodium silicate, which had been subjected to exhaustively functionalised by treatment with excess vinyl dimethylchlorosilane (Mn 4352, Mw 16490, polydispersity 3.78, vinyl content 2.2 weight%) required 40 weight% resin to give a solution viscosity of 1000 centistokes and showed release forces of 17.7g, 22.8g and 47.6g respectively.

PREFERRED COMPOSITION

(A) is selected from ViMe₂SiO(Me₂SiO)_aSiMe₂Vi, HexMe₂SiO(Me₂SiO)_aSiMe₂Hex, Vi₂MeSiO(Me₂SiO)_aSiMeVi₂, Hex₂MeSiO(Me₂SiO)_aSiMeHex₂, Vi₃SiO(Me₂SiO)_aSiVi₃, Hex₃SiO(Me₂SiO)_aSiHex₃, PhMeViSiO(Me₂SiO)_aSiPhMeVi, HexMe₂SiO(Me₂SiO)_a(MeHexSiO)_bSiMe₂Hex, ViMe₂SiO(Me₂SiO)_a(MeViSiO)_bSiMe₂Vi, Hex₂MeSiO(Me₂SiO)_a(MeHexSiO)_bSiMe₂Hex, Vi₂MeSiO(Me₂SiO)_a(MeViSiO)_bSiMeVi₂, Hex₃SiO(Me₂SiO)_a(MeHexSiO)_bSiMe₂Hex, Vi₃SiO(Me₂SiO)_a(MeViSiO)_bSiHexMe₂SiO(Me₂SiO)_a(MeHexSiO)_bSiMe₂HexVi₃ wherein Me = methyl, Vi = vinyl, Hex = 5-hexenyl, Ph = phenyl, a = 0-1000, b = 0-100.

(B) is selected from bis(trimethylsiloxy) dimethyldihydrogendisiloxane, heptamethyl hydrogen trisiloxane, hexamethyl dihydrogen trisiloxane, methyl hydrogen cyclosiloxanes, pentamethyl pentahydrogen cyclopentasiloxane, pentamethyl hydrogendisiloxane, polymethyl hydrogensiloxanes, tetramethyl tetrahydrogen cyclotetrasiloxane, tetramethyl dihydrogen disiloxane and methyl hydrogen dimethylsiloxane copolymers.

(C) is selected from chloroplatinic acid or chloroplatinic acid-divinyltetramethyldisiloxane complexes. (a) or (i) is selected from tetramethoxysilane, tetraethoxysilane and tetrapropoxysilane. The hydrogenated silane of (b) or (iv) is selected from trimethylchlorosilane, triethylchlorosilane, trimethylbromosilane, triethylbromosilane, trimethylfluorosilane, triethyl fluorosilane, dimethyl vinylchlorosilane and dimethyl-5-hexenylchlorosilane. The alcohol of (b) of (II') is selected from ethanol, methanol and isopropanol. (ii) is tetrachlorosilane. (c) or (iii) is ethyl polysilicate. The condensation catalyst is selected from hydrochloric acid, sulphuric acid and sulphonic acids.

The quenching agent is a silane of formula R₅R₆R₇SiZ wherein R₅, R₆, R₇ = H, 1-12C alkyl, 2-12C alkenyl, aryl, arylalkyl or perfluoroalkylethyl gps. of formula C_nF_{2n+1}CH₂CH₂ n = 1-6; Z = halogen atom or OR₈; R₈ = 1-6C alkyl gp., aryl gp. or arylalkyl gp. The quenching agent or (v) is a disiloxane selected from tetramethyldisiloxane; hexamethyl disiloxane, tetramethyl divinylsiloxane, tetramethyldi-5-hexenyl siloxane, tetramethyl-3,3,3-trifluoropropyl-disiloxane, tetramethyl diethylsiloxane, tetramethyl diphenyl disiloxane and diethyl diphenyl divinyl disiloxane.

The quenching agent further comprises an organic solvent, pref. heptane or xylene. The compsn. further comprises an inhibitor which inhibits the catalytic activity of the Pt gp. metal containing catalyst, pref. selected from maleates and fumarates. The

compsn. further comprises a bath life extender cpd., pref. selected from one or more prim. or sec. alcohol gps., carboxylic acids, cyclic ethers and water. The compsn. further comprises a diluent.

The compsn. further comprises heating the mixture after step (III').

FILE SEGMENT: CPI; GMPI; EPI
MANUAL CODE: CPI: A06-A00E1; A08-D05; A12-B01C; G02-A01A;
G02-A05; G02-A05B1; G02-A05D; G04-B02
EPI: X12-D03D; X12-E02B

=> fil hcap

FILE 'HCAPLUS' ENTERED AT 12:46:46 ON 21 MAR 2010

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FILE COVERS 1907 - 21 Mar 2010 VOL 152 ISS 13

FILE LAST UPDATED: 19 Mar 2010 (20100319/ED)

REVISED CLASS FIELDS (/NCL) LAST RELOADED: Dec 2009

USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Dec 2009

HCAplus now includes complete International Patent Classification (IPC) reclassification data for the first quarter of 2010.

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This file contains CAS Registry Numbers for easy and accurate substance identification.

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OR 12597-68-1/BI OR 12597-71-6/BI OR 12623-52-8/BI OR
16068-37-4/BI OR 232586-88-8/BI OR 37264-44-1/BI OR
51851-37-7/BI OR 73768-94-2/BI OR 7429-90-5/BI OR
7440-02-0/BI OR 7440-22-4/BI OR 7440-47-3/BI OR 7440-50-8
/BI OR 7440-57-5/BI OR 7440-66-6/BI OR 9003-56-9/BI)
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L5 430 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L4
L6 455 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON (BIS(3A)TRIETHOX
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L7 QUE SPE=ON ABB=ON PLU=ON COAT?
L8 198 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON (L5 OR L6) AND
L7
L9 2 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L2 AND (SI AND
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OROALKYLSILANE? OR ((PERFLUORO OR FLUORO) (A)ALKYL) OR PERFLUOROALKYL OR FLUOROALKYL) (2A) SILANE?

L12 8 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L8 AND L10

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L15 1 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L8 AND L14

L16 10 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L12 OR L13 OR L15

L25 QUE SPE=ON ABB=ON PLU=ON METAL?

L27 QUE SPE=ON ABB=ON PLU=ON ?SILOXANE?

L30 58 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L8 AND L25

L31 15 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L30 AND L27

L32 987 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON (L10 OR L11) AND L7

L33 220 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L32 AND L25

L34 83 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L33 AND L27

L35 QUE SPE=ON ABB=ON PLU=ON L25 (3A) SURFAC?

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L38 22 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON (WO2000-GB350/AP

L39 16 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L37 NOT L38

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L40 ANSWER 1 OF 6 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2004:429660 HCAPLUS Full-text

DOCUMENT NUMBER: 140:425054

ENTRY DATE: Entered STN: 27 May 2004

TITLE: Coating of copper or precious metal surfaces with polysiloxanes

INVENTOR(S): Fath, Andreas

PATENT ASSIGNEE(S): Hansgrohe A.-G., Germany

SOURCE: Ger. Offen., 7 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

INT. PATENT CLASSIF.:

MAIN: B05D007-16

SECONDARY: C09D183-04; B32B015-04; F16K027-06

CLASSIFICATION: 42-10 (Coatings, Inks, and Related Products)
Section cross-reference(s): 56

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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DE 10253841	A1	20040527	DE 2002-10253841	20021114

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PRIORITY APPLN. INFO.: DE 2002-10253841

20021114

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PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
DE 10253841	ICM	B05D007-16
	ICS	C09D183-04; B32B015-04; F16K027-06
	IPCI	B05D0007-16 [ICM,7]; C09D0183-04 [ICS,7]; B32B0015-04 [ICS,7]; F16K0027-06 [ICS,7]
	IPCR	B05D0001-18 [I,C*]; B05D0001-18 [I,A]; B05D0003-02 [N,C*]; B05D0003-02 [N,A]; B05D0007-00 [I,C*]; B05D0007-00 [I,A]; B05D0007-14 [I,C*]; B05D0007-14 [I,A]; C23C0022-05 [I,C*]; C23C0022-52 [I,A]; C23C0028-00 [I,C*]; C23C0028-00 [I,A]
	ECLA	B05D001/18C; B05D007/00N2; B05D007/14; C23C022/52; C23C028/00; L05D; Y01N

ABSTRACT:

Sanitary articles coated with Cu or precious metals

polysiloxanes using the sol-gel process at <100° with surface optionally pretreated by organosilanes or ω-functional mercaptans.

SUPPL. TERM:

sol gel process polysiloxane coating
copper coated sanitary article; mercaptan
treatment precious metal coated
sanitary article polysiloxane
coating; silane pretreatment precious
metal coated sanitary article
polysiloxane coating

INDEX TERM:

Coating materials
(anticorrosive; coating of copper or
precious metal surfaces of
sanitary articles with polysiloxanes)

INDEX TERM:

Silsesquioxanes
ROLE: IMF (Industrial manufacture); TEM (Technical or
engineered material use); PREP (Preparation); USES
(Uses)
(coating of copper or precious
metal surfaces of sanitary
articles with polysiloxanes)

INDEX TERM:

Noble metals
Polysiloxanes, uses
ROLE: TEM (Technical or engineered material use); USES
(Uses)
(coating of copper or precious
metal surfaces of sanitary
articles with polysiloxanes)

INDEX TERM:

Sol-gel processing
(coating; coating of copper or
precious metal surfaces of
sanitary articles with polysiloxanes)

INDEX TERM:

Molded plastics, uses
ROLE: TEM (Technical or engineered material use); USES
(Uses)
(sanitary articles; coating of copper or
precious metal surfaces of
sanitary articles with polysiloxanes)

INDEX TERM:

China
(sanitary ware, synthetic; coating of
copper or precious metal surfaces
of sanitary articles with polysiloxanes)

INDEX TERM: Coating process
(sol-gel; coating of copper or precious metal surfaces of sanitary articles with polysiloxanes)

INDEX TERM: Thiols, uses
ROLE: NUU (Other use, unclassified); USES (Uses)
(surface pretreatment; coating of copper or precious metal surfaces of sanitary articles with polysiloxanes)

INDEX TERM: Silanes
ROLE: TEM (Technical or engineered material use); USES (Uses)
(surface pretreatment; coating of copper or precious metal surfaces of sanitary articles with polysiloxanes)

INDEX TERM: 51851-37-7,
1H,1H,2H,2H-Perfluorooctyltriethoxysilane
101947-16-4,
1H,1H,2H,2H-Perfluorodecyltriethoxysilane
ROLE: NUU (Other use, unclassified); USES (Uses)
(coating of copper or precious metal surfaces of sanitary articles with polysiloxanes)

INDEX TERM: 7440-22-4, Silver, uses 7440-50-8, Copper, uses
7440-57-5, Gold, uses
ROLE: TEM (Technical or engineered material use); USES (Uses)
(coating of copper or precious metal surfaces of sanitary articles with polysiloxanes)

INDEX TERM: 232586-88-8P, 1,2-Bis(triethoxysilyl)ethane homopolymer
ROLE: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(coating; coating of copper or precious metal surfaces of sanitary articles with polysiloxanes)

INDEX TERM: 7440-66-6, Zinc, uses
ROLE: TEM (Technical or engineered material use); USES (Uses)
(printing, sanitary articles; coating of copper or precious metal surfaces of sanitary articles with polysiloxanes)

INDEX TERM: 7429-90-5, Aluminum, uses 12597-68-1, Stainless steel, uses
ROLE: TEM (Technical or engineered material use); USES (Uses)
(sanitary articles; coating of copper or precious metal surfaces of sanitary articles with polysiloxanes)

INDEX TERM: 9003-56-9, ABS polymer 12597-71-6, Brass, uses
ROLE: TEM (Technical or engineered material use); USES (Uses)
(silver-nickel-coated, sanitary article; coating of copper or precious metal surfaces of sanitary articles with polysiloxanes)

INDEX TERM: 16068-37-4, 1,2-Bis(triethoxysilyl)ethane 73768-94-2,

11-Mercapto-1-undecanol

ROLE: NUU (Other use, unclassified); USES (Uses)
 (surface pretreatment; coating of copper
 or precious metal surfaces of
 sanitary articles with polysiloxanes)

INDEX TERM: 7440-02-0, Nickel, uses 7440-47-3, Chromium, uses
 12623-52-8 37264-44-1

ROLE: TEM (Technical or engineered material use); USES
 (Uses)

(under layer; coating of copper or
 precious metal surfaces of
 sanitary articles with polysiloxanes)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS
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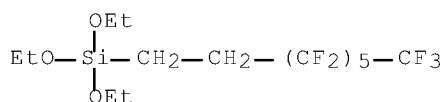
REFERENCE(S): (1) Anon; DE 10004132 A1 HCAPLUS
 (2) Anon; EP 1127930 A1 HCAPLUS
 (3) Anon; DE 19544763 A1 HCAPLUS
 (4) Anon; DE 19714949 A1 HCAPLUS
 (5) Anon; DE 19816136 A1 HCAPLUS
 (6) Anon; DE 19957325 A1 HCAPLUS

IT 51851-37-7, 1H,1H,2H,2H-Perfluorooctyltriethoxysilane
 101947-16-4, 1H,1H,2H,2H-Perfluorodecyltriethoxysilane

RL: NUU (Other use, unclassified); USES (Uses)
 (coating of copper or precious metal
 surfaces of sanitary articles with polysiloxanes
)

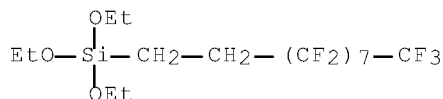
RN 51851-37-7 HCAPLUS

CN Silane, triethoxy(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl)-
 (CA INDEX NAME)



RN 101947-16-4 HCAPLUS

CN Silane, triethoxy(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-
 heptadecafluorodecyl)- (CA INDEX NAME)

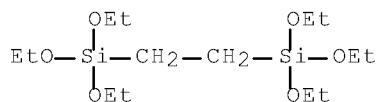


IT 16068-37-4, 1,2-Bis(triethoxysilyl)
 ethane

RL: NUU (Other use, unclassified); USES (Uses)
 (surface pretreatment; coating of copper or precious
 metal surfaces of sanitary articles with
 polysiloxanes)

RN 16068-37-4 HCAPLUS

CN 3,8-Dioxa-4,7-disiladecane, 4,4,7,7-tetraethoxy- (CA INDEX NAME)



L40 ANSWER 2 OF 6 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2001:458071 HCAPLUS Full-text

DOCUMENT NUMBER: 135:249355

ENTRY DATE: Entered STN: 26 Jun 2001

TITLE: Hierarchically structured functional porous silica and composite produced by evaporation-induced self-assembly

AUTHOR(S): Fan, H.; Reed, S.; Baer, T.; Schunk, R.; Lopez, G. P.; Brinker, C. J.

CORPORATE SOURCE: Center for Micro-Engineered Materials, Department of Chemical and Nuclear Engineering, The University of New Mexico, Albuquerque, NM, 87131, USA

SOURCE: Microporous and Mesoporous Materials (2001), 44-45, 625-637

CODEN: MIMMFJ; ISSN: 1387-1811

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

CLASSIFICATION: 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76

ABSTRACT:

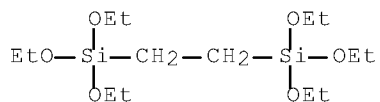
Recently so-called soft lithog. approaches [Angew. Chemical Int. Ed. 37 (1998) 550] have been combined with surfactant [Adv. Mater. 9 (1997) 811, Nature 390 (1997) 674] and particulate [Science 282 (1998) 2244] templating procedures to create oxides with multiple levels of structural order. But the materials thus formed have been limited primarily to oxides with no specific functionality, and the associated processing times have ranged from hours to days. Using self-assembling inks the authors have combined evaporation-induced (silica/surfactant) self-assembly [Adv. Mater. 11 (1999) 579] with rapid prototyping techniques like micro-pen lithog. [Science 283 (1999) 661, Mat. Res. Society Symp. Proc. 542 (1999) 159], ink-jet printing [Adv. Mater. 11 (1999) 734, Mat. Sci. English C5 (1998) 289], and dip coating on microcontact printed substrates to form hierarchically organized structures in seconds. By co-condensation of tetrafunctional silanes Si(OR)₄ with tri-functional organosilanes (RO)₃SiR' [Chemical Commun. (1999) 1367, Chemical Commun. (1997) 1769, J. Am. Chemical Society 119 (1997) 4090] or bridged silsesquioxanes (RO)₃Si-R'-Si(OR)₃ or by inclusion of organic additives, the authors have selectively derivatized the silica framework with functional R' ligands or mols. The rapid-prototyping procedures the authors describe are simple, employ readily available equipment, and provide a link between computer-aided design and self-assembled functional nanostructures. The authors expect that the ability to form arbitrary functional designs on arbitrary surfaces will be of practical importance for directly writing sensor arrays and fluidic or photonic systems.

SUPPL. TERM: porous silica microcontact printing lithog
organosilane selfassembly microstructure; pen lithog
evapn induced selfassembly; ink jet printing induced

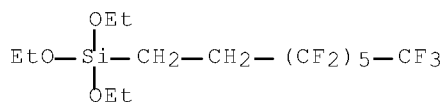
selfassembly
INDEX TERM: Ink-jet printing
Microstructure
Self-assembly
Surfactants
(hierarchically organized structures produced by combining evaporation-induced self-assembly with with soft lithog. or ink-jet printing)
INDEX TERM: Silica gel, processes
Silsesquioxanes
ROLE: PEP (Physical, engineering or chemical process);
PROC (Process)
(hierarchically organized structures produced by combining evaporation-induced self-assembly with with soft lithog. or ink-jet printing)
INDEX TERM: Lithography
(microcontact; hierarchically organized structures produced by combining evaporation-induced self-assembly with with soft lithog. or ink-jet printing)
INDEX TERM: 57-09-0, CTAB 4420-74-0 9004-95-9, Brij 56
13822-56-5, Aminopropyltrimethoxysilane 13822-56-5D, reaction product with
5,6-carboxyfluorescein, succinidyl ester
16068-37-4 51851-37-7,
Tridecafluoro-1,1,2,2-tetrahydrooctyltriethoxysilane
71783-41-0 106392-12-5, Pluronic P123
341527-77-3D, reaction product with
aminopropyltrimethoxysilane
ROLE: PEP (Physical, engineering or chemical process);
PROC (Process)
(hierarchically organized structures produced by combining evaporation-induced self-assembly with with soft lithog. or ink-jet printing)
INDEX TERM: 7440-21-3, Silicon, processes
ROLE: PEP (Physical, engineering or chemical process);
PROC (Process)
(porous; hierarchically organized structures produced by combining evaporation-induced self-assembly with with soft lithog. or ink-jet printing)
OS.CITING REF COUNT: 30 THERE ARE 30 CAPLUS RECORDS THAT CITE THIS RECORD (30 CITINGS)
DATE LAST CITED: Date last citing reference entered STN: 20 Jan 2010
OS.CITING.REFS: CAPLUS 2009:1601003; 2009:1152949; 2009:1217746;
2008:757344; 2007:1017558; 2007:635713;
2007:506957; 2007:157795; 2007:92398;
2007:77436; 2007:22538; 2006:1332008;
2006:667692; 2006:641555; 2006:445559;
2006:324811; 2006:19541; 2006:3484;
2005:1341230; 2005:953140; 2005:734376;
2004:833638; 2004:522635; 2004:440938;
2003:942594; 2003:900424; 2003:393249;
2003:382237; 2003:323991; 2002:256868
REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD.
REFERENCE(S): (1) Asefa, T; Nature 1999, V402, P867 HCAPLUS
(2) Baer, T; Int J Numer Meth Fluids 2000, V33, P405 HCAPLUS
(3) Bain, C; J Am Chem Soc 1989, V111, P321 HCAPLUS
(4) Brinker, C; Adv Mater 1999, V11, P579 HCAPLUS
(5) Burkett, S; Chem Commun 1996, P1367 HCAPLUS

- (6) Cairncross, R; Int J Numer Meth Fluids 2000, V33, P375 HCAPLUS
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- (17) Lu, Y; Nature 1997, V389, P364 HCAPLUS
- (18) Lu, Y; Nature 1999, V398, P223 HCAPLUS
- (19) Melde, B; Chem Mater 1999, V11, P3302 HCAPLUS
- (20) Pede, D; Mat Sci Eng 1998, VC5, P289 HCAPLUS
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- (26) Trau, M; Nature 1997, V390, P674 HCAPLUS
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- (33) Yang, P; Science 2000, V287, P465 HCAPLUS

IT 16068-37-4 51851-37-7,
 Tridecafluoro-1,1,2,2-tetrahydrooctyltriethoxysilane
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (hierarchically organized structures produced by combining
 evaporation-induced self-assembly with with soft lithog. or ink-jet
 printing)
 RN 16068-37-4 HCAPLUS
 CN 3,8-Dioxa-4,7-disiladecane, 4,4,7,7-tetraethoxy- (CA INDEX NAME)



RN 51851-37-7 HCAPLUS
 CN Silane, triethoxy(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl)-
 (CA INDEX NAME)



L40 ANSWER 3 OF 6 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2001:354328 HCAPLUS Full-text

DOCUMENT NUMBER: 135:8851

ENTRY DATE: Entered STN: 17 May 2001

TITLE: Surfactant templated mesoporous hybrid thin films

AUTHOR(S): Fan, Hongyou; Lu, Yunfeng; Assink, Roger A.; Lopez, Gabriel P.; Brinker, C. Jeffrey

CORPORATE SOURCE: University of New Mexico/NSF Center for Micro-Engineered Materials, The University of New Mexico, Albuquerque, NM, 87131, USA

SOURCE: Materials Research Society Symposium Proceedings (2001), 628(Organic/Inorganic Hybrid Materials), CC6.41.1-CC6.41.7
CODEN: MRSPDH; ISSN: 0272-9172

PUBLISHER: Materials Research Society

DOCUMENT TYPE: Journal

LANGUAGE: English

CLASSIFICATION: 57-1 (Ceramics)

ABSTRACT:

Organic/inorg. hybrid mesoporous films exhibiting ordered mesophases were prepared by a simple dip-coating procedure. Beginning with a homogeneous solution of tetraethoxysilane, organoalkoxysilane ((R'Si(OR)₃), R' is a non-hydrolyzable functional ligand) surfactant, we relied on solvent evaporation to induce micellization and continuous self-assembly into hybrid silica-surfactant thin film mesophases. Surface acoustic wave (SAW)-based nitrogen sorption measurements indicate that the films have high surface areas and unimodal pore diams. after removal of surfactants.

SUPPL. TERM: silica hybrid mesoporous film surfactant template
prepn property

INDEX TERM: Surfactants
(organoalkoxysilane; preparation, properties and uses of
surfactant-templated mesoporous silica-based hybrid
thin films)

INDEX TERM: Pore size
Self-assembly
Surface area
(preparation, properties and uses of
surfactant-templated mesoporous silica-based hybrid
thin films)

INDEX TERM: Hybrid organic-inorganic materials
(silica-surfactant mesoporous films; preparation,
properties and uses of surfactant-templated
mesoporous silica-based hybrid thin films)

INDEX TERM: 81-88-9, Rhodamine-b 2646-15-3, Oil blue n
2832-40-8, disperse yellow 3 9007-43-6, cytochrome
c, uses

ROLE: MOA (Modifier or additive use); USES (Uses)
(additive; preparation, properties and uses of
surfactant-templated mesoporous silica-based hybrid
thin films)

INDEX TERM: 7440-22-4, Silver, uses
ROLE: MOA (Modifier or additive use); USES (Uses)
(ions and nanoparticles, additive; preparation,
properties and uses of surfactant-templated
mesoporous silica-based hybrid thin films)

INDEX TERM: 7631-86-9P, Silica, preparation

ROLE: PEP (Physical, engineering or chemical process);
PRP (Properties); SPN (Synthetic preparation); TEM
(Technical or engineered material use); PREP
(Preparation); PROC (Process); USES (Uses)
(mesoporous films; preparation, properties and uses of
surfactant-templated mesoporous silica-based hybrid
thin films)

INDEX TERM: 78-10-4, Silicic acid (H₄SiO₄), tetraethyl ester
ROLE: PEP (Physical, engineering or chemical process);
PROC (Process)
(precursor; preparation, properties and uses of
surfactant-templated mesoporous silica-based hybrid
thin films)

INDEX TERM: 13822-56-5, Aminopropyltrimethoxysilane
ROLE: MOA (Modifier or additive use); USES (Uses)
(structure directing agent, compound with dye;
preparation, properties and uses of surfactant-templated
mesoporous silica-based hybrid thin films)

INDEX TERM: 57-09-0, Ctab 4420-74-0 9004-95-9, Brij-56
16068-37-4 51851-37-7 71783-41-0
ROLE: MOA (Modifier or additive use); USES (Uses)
(structure directing agent; preparation, properties and
uses of surfactant-templated mesoporous
silica-based hybrid thin films)

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD
(1 CITINGS)

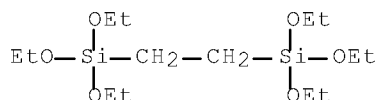
DATE LAST CITED: Date last citing reference entered STN: 16 Feb 2009

OS.CITING.REFS: CAPLUS 2004:455487

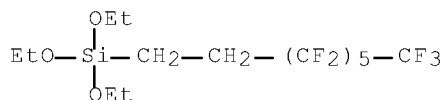
REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS
RECORD.

REFERENCE(S): (1) Burkett, S; Chemical Communications 1996, P1367
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1998, V32, P2749 HCAPLUS
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HCAPLUS

IT 16068-37-4 51851-37-7
RL: MOA (Modifier or additive use); USES (Uses)
(structure directing agent; preparation, properties and uses of
surfactant-templated mesoporous silica-based hybrid thin films)
RN 16068-37-4 HCAPLUS
CN 3,8-Dioxa-4,7-disiladecane, 4,4,7,7-tetraethoxy- (CA INDEX NAME)



RN 51851-37-7 HCAPLUS
CN Silane, triethoxy(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl)-
(CA INDEX NAME)



L40 ANSWER 4 OF 6 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2001:183293 HCAPLUS [Full-text](#)
DOCUMENT NUMBER: 135:12013
ENTRY DATE: Entered STN: 16 Mar 2001
TITLE: Rapid prototyping of patterned multifunctional
nanostructures
AUTHOR(S): Fan, Hongyou; Lopez, Gabriel P.; Brinker, C.
Jeffrey
CORPORATE SOURCE: The Advanced Materials Laboratory, Sandia
National Laboratories, The University of New
Mexico/NSF Center for Micro-Engineered
Materials, Albuquerque, NM, USA
SOURCE: Materials Research Society Symposium Proceedings
(2001), 624(Materials Development for
Direct Write Technologies), 231-240
CODEN: MRSPDH; ISSN: 0272-9172
PUBLISHER: Materials Research Society
DOCUMENT TYPE: Journal
LANGUAGE: English
CLASSIFICATION: 74-13 (Radiation Chemistry, Photochemistry, and
Photographic and Other Reprographic Processes)
Section cross-reference(s): 66, 76

ABSTRACT:

The ability to engineer ordered arrays of objects on multiple length scales has potential for applications such as microelectronics, sensors, waveguides, and photonic lattices with tunable band gaps. Since the invention of surfactant templated mesoporous sieves in 1992, great progress has been made in controlling different mesophases in the form of powders, particles, fibers, and films. To date, although there have been several reports of patterned mesostructures, materials prepared have been limited to metal oxides with no specific functionality. For many of the

envisioned applications of hierarchical materials in microsystems, sensors, waveguides, photonics, and electronics, it is necessary to define both form and function on several length scales. In addition, the patterning strategies utilized so far require hours or even days for completion. Such slow processes are inherently difficult to implement in com. environments. We present a series of new methods of producing patterns within seconds. Combining sol-gel chemical, Evaporation-Induced Self-Assembly (EISA), and rapid prototyping techniques like pen lithog., ink-jet printing, and dip-coating on micro-contact printed substrates, we form hierarchically organized silica structures that exhibit order and function on multiple scales: on the mol. scale, functional organic moieties are positioned on pore surfaces, on the mesoscale, mono-sized pores are organized into 1-, 2-, or 3-dimensional networks, providing size-selective accessibility from the gas or liquid phase, and on the macroscale, 2-dimensional arrays and fluidic or photonic systems may be defined. These rapid patterning techniques establish for the first time a link between computer-aided design and rapid processing of self-assembled nanostructures.

SUPPL. TERM: silica nanostructure self assembly patterning
INDEX TERM: Wetting
(dewetting; rapid prototyping of patterned multifunctional nanostructures)
INDEX TERM: Coating process
(dip; rapid prototyping of patterned multifunctional nanostructures)
INDEX TERM: Calcination
Condensation reaction
Hydrolysis
Ink-jet printing
Micellization
Nanostructures
Order
Pore size
Pore structure
Self-assembly
Sol-gel processing
Surface area
(rapid prototyping of patterned multifunctional nanostructures)
INDEX TERM: Lithography
(submicron; rapid prototyping of patterned multifunctional nanostructures)
INDEX TERM: 81-88-9, Rhodamine B 2646-15-3, Oil blue N
2832-40-8, Disperse yellow 3 7440-22-4, Silver, uses
9007-43-6, cytochrome-c, uses 14701-21-4, Silver 1+, uses
ROLE: MOA (Modifier or additive use); USES (Uses)
(additive; rapid prototyping of patterned multifunctional nanostructures)
INDEX TERM: 7631-86-9, Silica, processes
ROLE: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(rapid prototyping of patterned multifunctional nanostructures)
INDEX TERM: 4420-74-0 13822-56-5, Aminopropyltrimethoxysilane
13822-56-5D, Aminopropyltrimethoxysilane, reaction product with 5,6-carboxyfluorescein, succimidyl ester
16068-37-4 51851-37-7,

Tridecafluoro-1,1,2,2-tetrahydrooctyltriethoxysilane
71783-41-0 341527-77-3D, reaction product with
aminopropyltrimethoxysilane
ROLE: PEP (Physical, engineering or chemical process);
PROC (Process)

(rapid prototyping of patterned multifunctional
nanostructures)
INDEX TERM: 78-10-4, TEOS
ROLE: RCT (Reactant); RACT (Reactant or reagent)
(rapid prototyping of patterned multifunctional
nanostructures)
INDEX TERM: 7440-21-3, Silicon, processes
ROLE: PEP (Physical, engineering or chemical process);
PROC (Process)
(substrate; rapid prototyping of patterned
multifunctional nanostructures)
INDEX TERM: 57-09-0, CTAB 9004-95-9, Brij-56 106392-12-5,
Pluronic P123
ROLE: PEP (Physical, engineering or chemical process);
PROC (Process)
(template; rapid prototyping of patterned
multifunctional nanostructures)

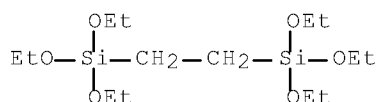
REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS
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REFERENCE(S): (1) Aksay, I; Science 1996, V273, P892 HCAPLUS
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pg:349 1988
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(18) Trau, M; Nature 1997, V390, P674 HCAPLUS
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HCAPLUS
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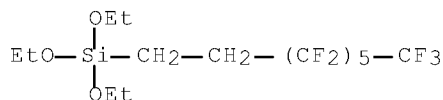
IT 16068-37-4 51851-37-7,
Tridecafluoro-1,1,2,2-tetrahydrooctyltriethoxysilane
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(rapid prototyping of patterned multifunctional nanostructures)

RN 16068-37-4 HCAPLUS

CN 3,8-Dioxa-4,7-disiladecane, 4,4,7,7-tetraethoxy- (CA INDEX NAME)



RN 51851-37-7 HCAPLUS

CN Silane, triethoxy(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl)-
(CA INDEX NAME)

L40 ANSWER 5 OF 6 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2000:323768 HCAPLUS Full-text

DOCUMENT NUMBER: 133:96697

ENTRY DATE: Entered STN: 19 May 2000

TITLE: Rapid prototyping of patterned functional nanostructures

AUTHOR(S): Fan, Hongyou; Lu, Yunfeng; Stump, Aaron; Reed, Scott T.; Baer, Tom; Schunk, Randy; Perez-Luna, Victor; Lopez, Gabriel P.; Brinker, C. Jeffrey
CORPORATE SOURCE: Department of Chemical and Nuclear Engineering, The University of New Mexico Center for Micro-Engineered Materials, Albuquerque, NM, 87131, USA

SOURCE: Nature (London) (2000), 405(6782), 56-60

CODEN: NATUAS; ISSN: 0028-0836

PUBLISHER: Nature Publishing Group

DOCUMENT TYPE: Journal

LANGUAGE: English

CLASSIFICATION: 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73, 76

ABSTRACT:

Living systems exhibit form and function on multiple length scales and at multiple locations. In order to mimic such natural structures, it is necessary to develop efficient strategies for assembling hierarchical materials. Conventional photolithog., although ubiquitous in the fabrication of microelectronics and microelectromech. systems, is impractical for defining feature sizes below 0.1 μm and poorly suited to pattern chemical functionality. Recently, so-called 'soft' lithog. approaches have been combined with surfactant and particulate templating procedures to create materials with multiple levels of structural order. But the materials thus formed have been limited primarily to oxides with no specific functionality, and the associated processing times have ranged from hours to days. Here, using a self-assembling 'ink' the authors combine silica-surfactant self-assembly with three rapid printing procedures-pen lithog., ink-jet printing, and dip-coating of patterned self-assembled monolayers-to form functional, hierarchically organized structures in seconds. The rapid-prototyping procedures the

authors describe are simple, employ readily available equipment, and provide a link between computer-aided design and self-assembled nanostructures. The authors expect that the ability to form arbitrary functional designs on arbitrary surfaces will be of practical importance for directly writing sensor arrays and fluidic or photonic systems.

SUPPL. TERM: pen lithog ink jet printing SAM hierarchically
organized nanostructure

INDEX TERM: Fluorescence
Ink-jet printing
Lithography
Self-assembled monolayers
(functional hierarchically organized structures
formation by using organic modified silica-surfactant
self-assembly in combination with micropen lithog.
and ink-jet printing and dip-coating of
patterned self-assembled monolayers)

INDEX TERM: Silica gel, processes
ROLE: PEP (Physical, engineering or chemical process);
PROC (Process)
(functional hierarchically organized structures
formation by using organic modified silica-surfactant
self-assembly in combination with micropen lithog.
and ink-jet printing and dip-coating of
patterned self-assembled monolayers)

INDEX TERM: Micromachining
Optical imaging devices
Optical sensors
(functional hierarchically organized structures
formation by using organic modified silica-surfactant
self-assembly in combination with micropen lithog.
and ink-jet printing and dip-coating of
patterned self-assembled monolayers in relation to)

INDEX TERM: 64-17-5, Ethanol, uses 112-04-9,
Octadecyltrichlorosilane 73768-94-2,
11-Mercaptoundecanol
ROLE: NUU (Other use, unclassified); USES (Uses)
(functional hierarchically organized structures
formation by using organic modified silica-surfactant
self-assembly in combination with micropen lithog.
and ink-jet printing and dip-coating of
patterned self-assembled monolayers)

INDEX TERM: 78-10-4 81-88-9, Rhodamine B 4420-74-0
7631-86-9, Silica, processes 9004-95-9, Brij 56
13822-56-5 16068-37-4 51851-37-7
281198-81-0 281655-73-0
ROLE: PEP (Physical, engineering or chemical process);
PROC (Process)
(functional hierarchically organized structures
formation by using organic modified silica-surfactant
self-assembly in combination with micropen lithog.
and ink-jet printing and dip-coating of
patterned self-assembled monolayers)

OS.CITING REF COUNT: 240 THERE ARE 240 CAPLUS RECORDS THAT CITE THIS
RECORD (241 CITINGS)

DATE LAST CITED: Date last citing reference entered STN: 04 Feb 2010

OS.CITING.REFS: CAPLUS 2009:1475995; 2010:42100; 2009:1451070;
2009:1091455; 2009:1217746; 2009:1191750;
2009:1096905; 2009:1053230; 2009:1167649;
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2009:640105; 2009:839229; 2009:475737;
2009:514978; 2009:319695; 2009:356569;
2009:383172; 2009:101830; 2009:7973;
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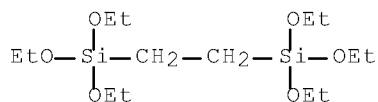
REFERENCE(S): (1) Asefa, T; Nature 1999, V402, P867 HCAPLUS
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(5) Burkett, S; Chem Commun 1996, P1367 HCAPLUS
(6) Cairncross, R; Int J Numer Meth Fluids (in the press)
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(31) Yang, P; Science 1998, V282, P2244 HCAPLUS
(32) Yang, P; Science 2000, V287, P465 HCAPLUS

IT 16068-37-4 51851-37-7

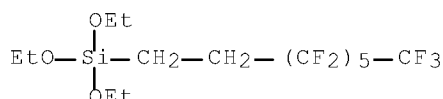
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(functional hierarchically organized structures formation by
using organic modified silica-surfactant self-assembly in
combination with micropen lithog. and ink-jet printing and dip-
coating of patterned self-assembled monolayers)

RN 16068-37-4 HCAPLUS

CN 3,8-Dioxa-4,7-disiladecane, 4,4,7,7-tetraethoxy- (CA INDEX NAME)



RN 51851-37-7 HCAPLUS

CN Silane, triethoxy(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl)-
(CA INDEX NAME)

L40 ANSWER 6 OF 6 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1998:621269 HCAPLUS Full-text

DOCUMENT NUMBER: 129:261374

ORIGINAL REFERENCE NO.: 129:53257a,53260a

ENTRY DATE: Entered STN: 01 Oct 1998

TITLE: Cure-on-demand, moisture-curable compositions
having reactive silane functionalityINVENTOR(S): Liu, Junkang; Leir, Charles M.; Moore, George G.
I.; Sherman, Audrey A.; Everaerts, Albert I.;
Boulos, Marie A.

PATENT ASSIGNEE(S): Minnesota Mining and Manufacturing Co., USA

SOURCE: PCT Int. Appl., 75 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

INT. PATENT CLASSIF.:

MAIN: C08L101-10

SECONDARY: C08K005-00; C08L043-04

CLASSIFICATION: 37-6 (Plastics Manufacture and Processing)

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 9840439	A1	19980917	WO 1998-US4939	199803 12

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W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ,
DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP,
KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK,
MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL,
TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW

RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES,
FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG,
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AU 9864619 A 19980929 AU 1998-64619

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 EP 966503 A1 19991229 EP 1998-910362
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 EP 966503 B1 20030528
 EP 966503 B2 20080109
 R: DE, FR, GB
 JP 2001515533 T 20010918 JP 1998-539835
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 JP 3976350 B2 20070919
 PRIORITY APPLN. INFO.: US 1997-815029 A2
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 WO 1998-US4939 W
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PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 9840439	ICM	C08L101-10
	ICS	C08K0005-00; C08L043-04
	IPCI	C08L0101-10 [ICM,6]; C08L0101-00 [ICM,6,C*]; C08K0005-00 [ICS,6]; C08L0043-04 [ICS,6]; C08L0043-00 [ICS,6,C*]
	IPCR	C08F0030-00 [I,C*]; C08F0030-08 [I,A]; C08K0005-00 [I,C*]; C08K0005-00 [I,A]; C08L0083-00 [I,C*]; C08L0083-04 [I,A]; C08L0101-00 [I,C*]; C08L0101-10 [I,A]; C09J0183-00 [I,C*]; C09J0183-04 [I,A]; C09J0201-00 [I,C*]; C09J0201-10 [I,A]
	ECLA	C08L101/10+C
AU 9864619	IPCI	C08L0101-10 [ICM,6]; C08L0101-00 [ICM,6,C*]; C08K0005-00 [ICS,6]; C08L0043-04 [ICS,6]; C08L0043-00 [ICS,6,C*]
	IPCR	C08F0030-00 [I,C*]; C08F0030-08 [I,A]; C08K0005-00 [I,C*]; C08K0005-00 [I,A]; C08L0083-00 [I,C*]; C08L0083-04 [I,A]; C08L0101-00 [I,C*]; C08L0101-10 [I,A]; C09J0183-00 [I,C*]; C09J0183-04 [I,A]; C09J0201-00 [I,C*]; C09J0201-10 [I,A]
	ECLA	C08L101/10+C
EP 966503	IPCI	C08L0101-00 [I,C]; C08L0101-10 [I,A]; C08K0005-00 [I,C]; C08K0005-00 [I,A]; C08L0043-00 [I,C]; C08L0043-04 [I,A]
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[I,C*]; C09J0183-04 [I,A]; C09J0183-00 [I,C*];
 C09J0201-10 [I,A]; C09J0201-00 [I,C*];
 D21H0027-00 [I,A]; B32B0027-00 [I,A]
 IPCR C08F0030-00 [I,C*]; C08F0030-08 [I,A];
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 C09J0201-00 [I,C*]; C09J0201-10 [I,A];
 B32B0027-00 [I,C]; B32B0027-00 [I,A]; D21H0027-00
 [I,C]; D21H0027-00 [I,A]
 ECLA C08L101/10+C

ABSTRACT:

The title compns. comprising mols. having reactive silane functional groups and an acid generating material. The acid generating material releases an acid upon exposure to heat, UV light, visible light, electron beam irradiation or microwave irradiation to initiate and accelerate the crosslinking reaction. Articles prepared using the moisture curable materials are also disclosed, as are methods of curing those materials.

SUPPL. TERM: silyl polymer moisture curable; acid generating agent
 moisture curable compn; release coating
 silicone

INDEX TERM: Release coatings
 (cure-on-demand, moisture-curable compns. having
 reactive silane functionality)

INDEX TERM: Polysiloxanes, uses
 ROLE: TEM (Technical or engineered material use); USES
 (Uses)
 (cure-on-demand, moisture-curable compns. having
 reactive silane functionality)

INDEX TERM: Polyethers, uses
 ROLE: TEM (Technical or engineered material use); USES
 (Uses)
 (fluorine-containing, triethoxysilyl-terminated;
 cure-on-demand, moisture-curable compns. having
 reactive silane functionality)

INDEX TERM: Polyethers, uses
 ROLE: TEM (Technical or engineered material use); USES
 (Uses)
 (perfluoro, triethoxysilyl-terminated;
 cure-on-demand, moisture-curable compns. having
 reactive silane functionality)

INDEX TERM: Fluoropolymers, uses
 Fluoropolymers, uses
 ROLE: TEM (Technical or engineered material use); USES
 (Uses)
 (polyether-, triethoxysilyl-terminated;
 cure-on-demand, moisture-curable compns. having
 reactive silane functionality)

INDEX TERM: Adhesives
 (pressure-sensitive; cure-on-demand,
 moisture-curable compns. having reactive silane
 functionality)

INDEX TERM: 5495-84-1, 2-Isopropylthioxanthone 82184-29-0
 104558-94-3, Cyracure UVI-6974 153660-59-4
 175391-01-2 213202-18-7 213202-19-8 213471-64-8
 213471-66-0
 ROLE: CAT (Catalyst use); USES (Uses)
 (cure-on-demand, moisture-curable compns. having

INDEX TERM: reactive silane functionality)
78-08-0DP, Vinyltriethoxysilane, reaction products with hydrogen siloxanes 998-30-1DP, Triethoxysilane, reaction products with vinyl-terminated siloxanes 2768-02-7DP, reaction products with hydrogen siloxanes 4130-08-9DP, Vinyltriacetoxysilane, reaction products with hydrogen siloxanes 5507-44-8DP, Vinyl-diethoxymethylsilane, reaction products with hydrogen siloxanes 9016-00-6DP, Polydimethylsiloxane, vinyl-terminated, reaction products with triethoxysilane 31692-79-2P, Polydimethylsiloxane, hydroxy-terminated 31900-57-9DP, Polydimethylsiloxane, vinyl-terminated, reaction products with triethoxysilane 57813-67-9DP, 3-Butenyltriethoxysilane, reaction products with hydrogen siloxanes 70364-11-3DP, Vinyl-dimethylethoxysilane, reaction products with hydrogen siloxanes 161127-41-9DP, Methylsilanediol-octamethylcyclotetrasiloxane copolymer, trimethylsilyl-terminated, reaction products with alkenylalkoxysilanes
ROLE: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(cure-on-demand, moisture-curable compns. having reactive silane functionality)

INDEX TERM: 78-07-9, Ethyltriethoxysilane 78-10-4 998-30-1, Triethoxysilane 2943-75-1, Triethoxyoctylsilane 9017-68-9, Acrylic acid-isooctyl acrylate copolymer 14814-09-6 16068-37-4, Bis(triethoxysilyl)ethane 18401-43-9 18536-91-9, Dodecyltriethoxysilane 51851-37-7 52034-16-9 52192-86-6, 1-Hexene-1,7-octadiene copolymer 77396-40-8 87135-01-1 97917-34-5 213202-20-1, Isooctyl acrylate-3-(trimethoxysilyl)propyl methacrylate copolymer
ROLE: TEM (Technical or engineered material use); USES (Uses)
(cure-on-demand, moisture-curable compns. having reactive silane functionality)

OS.CITING REF COUNT: 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD (7 CITINGS)

DATE LAST CITED: Date last citing reference entered STN: 13 Mar 2009

OS.CITING.REFS: CAPLUS 2000:741098; 2007:282071; 2005:394798; 2005:140861; 2003:874834; 2002:615746

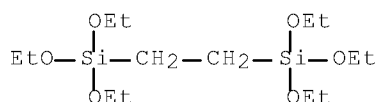
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD.

REFERENCE(S): (1) Takeoka Toru; US 5409963 A 1995 HCAPLUS
(2) Union Carbide Chem Plastic; EP 0401540 A 1990 HCAPLUS

IT 16068-37-4, Bis(triethoxysilyl)ethane 51851-37-7
RL: TEM (Technical or engineered material use); USES (Uses)
(cure-on-demand, moisture-curable compns. having reactive silane functionality)

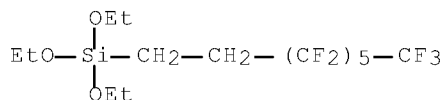
RN 16068-37-4 HCAPLUS

CN 3,8-Dioxa-4,7-disiladecane, 4,4,7,7-tetraethoxy- (CA INDEX NAME)



RN 51851-37-7 HCAPLUS

CN Silane, triethoxy(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl)-
(CA INDEX NAME)



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L41 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2004:177504 HCAPLUS Full-text

DOCUMENT NUMBER: 140:426946

ENTRY DATE: Entered STN: 04 Mar 2004

TITLE: Bonding and corrosion protection mechanisms of
γ-APS and BTSE silane films on aluminum
substrates

AUTHOR(S): Song, Jun; Van Ooij, W. J.

CORPORATE SOURCE: Department of Chemical and Materials
Engineering, University of Cincinnati,
Cincinnati, OH, 45221-0012, USA

SOURCE: Journal of Adhesion Science and Technology (
2003), 17(16), 2191-2221
CODEN: JATEE8; ISSN: 0169-4243

PUBLISHER: VSP BV

DOCUMENT TYPE: Journal

LANGUAGE: English

CLASSIFICATION: 56-6 (Nonferrous Metals and Alloys)
Section cross-reference(s): 42

ABSTRACT:

Films of γ-aminopropyltriethoxysilane (γ-APS), 1,2-
bis [triethoxysilyl] ethane (BTSE) and their
mixts. adsorbed onto pure Al from aqueous solns. were characterized by
ellipsometry, IR spectroscopy (IR) and XPS. After hydrolysis in H₂O the
silanes were readily adsorbed onto Al oxide surfaces initially forming
hydrogen bonds. Upon curing, such bonds are replaced by
metalloxiloxane bonds, Si-O-Al. The remaining silanol groups in
the film condense and form Si-O-Si bonds. As the Si-O-Al bonds are known
to hydrolyze, the corrosion protection is related to the hydrophobicity
of the siloxane films formed on the metal substrate.
BTSE films are acidic as they contain free silanol groups, therefore
these are compatible with some paints but not with others. Electrochem.
impedance spectroscopy (EIS) results, salt spray test results and
filiform corrosion test results showed that some silane treatments, such
as 2-step γ-APS/BTSE and BTSE only, provided better corrosion
protection on Al substrates as compared with a chromate treatment.

Mechanisms of adhesion and corrosion protection of these silane films on Al substrates are proposed.

SUPPL. TERM: bonding silane film aluminum substrate; corrosion protection silane film aluminum substrate

INDEX TERM: Adhesion, physical
Coupling agents
(bonding and corrosion protection mechanisms of γ -APS and BTSE silane films on aluminum substrates)

INDEX TERM: Polyesters, uses
Polyurethanes, uses
ROLE: TEM (Technical or engineered material use); USES (Uses)
(corrosion performance of polymer powder coatings on silane-treated aluminum substrates)

INDEX TERM: IR reflection-absorption spectra
(of hydrolyzed γ -APS and BTSE silane films on aluminum substrates)

INDEX TERM: Corrosion
(resistance; bonding and corrosion protection mechanisms of γ -APS and BTSE silane films on aluminum substrates)

INDEX TERM: 919-30-2, γ -Aminopropyltriethoxysilane
7429-90-5, Aluminum, processes 11146-15-9
16068-37-4, 1,2-Bis[triethoxysilyl] ethane
ROLE: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
(bonding and corrosion protection mechanisms of γ -APS and BTSE silane films on aluminum substrates)

OS.CITING REF COUNT: 17 THERE ARE 17 CAPLUS RECORDS THAT CITE THIS RECORD (17 CITINGS)

DATE LAST CITED: Date last citing reference entered STN: 04 Mar 2010

OS.CITING.REFS: CAPLUS 2010:161428; 2009:1398277; 2009:1296076;
2009:905377; 2009:227799; 2009:349551;
2009:392088; 2008:1137786; 2007:961321;
2007:709108; 2007:587623; 2007:580985;
2007:468606; 2006:1323426; 2006:1235019;
2006:412726; 2005:992273

REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD.

REFERENCE(S): (1) Allen, K; J Adhesion Sci Technol 1992, V6, P23
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(2) Anon; Silane and Other Coupling Agents 2000, V2
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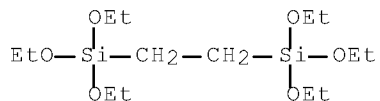
IT 16068-37-4, 1,2-Bis[triethoxysilyl]
ethane

RL: PEP (Physical, engineering or chemical process); PRP
(Properties); PYP (Physical process); PROC (Process)

(bonding and corrosion protection mechanisms of γ -APS and
BTSE silane films on aluminum substrates)

RN 16068-37-4 HCAPLUS

CN 3,8-Dioxa-4,7-disiladecane, 4,4,7,7-tetraethoxy- (CA INDEX NAME)



L41 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2002:293774 HCAPLUS Full-text

DOCUMENT NUMBER: 136:326995

ENTRY DATE: Entered STN: 19 Apr 2002

TITLE: Method for pretreating and/or coating
metallic surfaces with a paint-like
coating prior to forming and use of
substrates coated in this wayINVENTOR(S): Jung, Christian; Schimakura, Toshiaki; Maurus,
Norbert; Domes, Heribert

PATENT ASSIGNEE(S): Chemteall Gmbh, Germany

SOURCE: PCT Int. Appl., 146 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: German

INT. PATENT CLASSIF.:

MAIN: C09D005-00

SECONDARY: C09D005-08

CLASSIFICATION: 42-2 (Coatings, Inks, and Related Products)

Section cross-reference(s): 55, 56

FAMILY ACC. NUM. COUNT: 6

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2002031064	A1	20020418	WO 2001-EP11737	20011010

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GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK,
LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ,
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AU 2001095609	A	20020422	AU 2001-95609	20011010
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March 21, 2010

10/534,560

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US 7615257	B2	20091110		
US 20080026157	A1	20080131	US 2007-880818	200707 24
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PRIORITY APPLN. INFO.:			DE 2000-10050537	A 200010 11
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			DE 2001-10119606	A 200104 21
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			DE 2001-10127721	A 200106 07
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			EP 2001-976296	A3 200110 10
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			WO 2001-EP11737	W 200110 10
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PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2002031064	ICM	C09D005-00
	ICS	C09D005-08
	IPCI	C09D0005-00 [ICM,7]; C09D0005-08 [ICS,7]
	IPCR	B05D0003-06 [N,C*]; B05D0003-06 [N,A]; B05D0007-16 [I,C*]; B05D0007-16 [I,A]; C09D0005-00 [I,C*]; C09D0005-00 [I,A]; C09D0005-08 [I,C*]; C09D0005-08 [I,A]; C23C0022-05 [I,C*]; C23C0022-34 [I,A]
	ECLA	B05D007/16; C09D005/00B; C09D005/08; C09D005/08B4; C23C022/34; L05D; L05D
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	IPCR	B05D0003-06 [N,C*]; B05D0003-06 [N,A]; B05D0007-16 [I,C*]; B05D0007-16 [I,A]; C09D0005-00 [I,C*]; C09D0005-00 [I,A]; C09D0005-08 [I,C*]; C09D0005-08 [I,A]; C23C0022-05 [I,C*]; C23C0022-34 [I,A]
	ECLA	B05D007/16; C09D005/00B; C09D005/08; C09D005/08B4; C23C022/34; L05D; L05D
EP 1328590	IPCI	C09D0005-00 [ICM,7]; C09D0005-08 [ICS,7]
	IPCR	B05D0003-06 [N,C*]; B05D0003-06 [N,A]; B05D0007-16 [I,C*]; B05D0007-16 [I,A]; C09D0005-00 [I,C*]; C09D0005-00 [I,A]; C09D0005-08 [I,C*]; C09D0005-08 [I,A]; C23C0022-05 [I,C*]; C23C0022-34 [I,A]
	ECLA	B05D007/16; C09D005/00B; C09D005/08; C09D005/08B4; C23C022/34; L05D; L05D
ZA 2003002864	IPCI	C09D [ICM,7]
EP 1642939	IPCI	C09D0005-08 [I,A]
	ECLA	B05D007/00N3; B05D007/16; C09D005/08B4; C09D007/12D2; L05D
AU 2001295609	IPCI	C09D0005-00 [I,C*]; C09D0005-00 [I,A]; B05D0003-06 [N,C*]; B05D0003-06 [N,A]; B05D0007-16 [I,C*]; B05D0007-16 [I,A]; C09D0005-08 [I,C*]; C09D0005-08 [I,A]; C23C0022-05 [I,C*]; C23C0022-34 [I,A]
	IPCR	C09D0005-00 [I,C*]; C09D0005-00 [I,A]; B05D0003-06 [N,C*]; B05D0003-06 [N,A]; B05D0007-16 [I,C*]; B05D0007-16 [I,A]; C09D0005-08 [I,C*]; C09D0005-08 [I,A]; C23C0022-05 [I,C*]; C23C0022-34 [I,A]
	ECLA	B05D007/16; C09D005/00B; C09D005/08; C09D005/08B4; C23C022/34; L05D; L05D
ZA 2003002862	IPCI	C09D [ICM,7]
US 20040062873	IPCI	B05D0003-02 [I,A]; B05D0003-06 [I,A]
	IPCR	B05D0003-06 [N,C*]; B05D0003-06 [N,A]; B05D0007-16 [I,C*]; B05D0007-16 [I,A]; C09D0005-00 [I,C*]; C09D0005-00 [I,A]; C09D0005-08 [I,C*]; C09D0005-08 [I,A];

C23C0022-05 [I,C*]; C23C0022-34 [I,A];
 B05D0003-02 [I,C]; B05D0003-02 [I,A]
 NCL 427/407.100; 427/508.000; 427/402.000;
 427/409.000; 427/410.000
 ECLA B05D007/16; C09D005/00B; C09D005/08;
 C09D005/08B4; C23C022/34; L05D; L05D
 US 20080026157 IPCI B05D0001-36 [I,A]
 NCL 427/409.000
 ECLA B05D007/16; C09D005/00B; C09D005/08;
 C09D005/08B4; C23C022/34; L05D; L05D

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

ABSTRACT:

The invention relates to a method for coating a
 metallic strip. The strip or optionally, the strip sections
 produced from said strip in the subsequent process, is/are first
 coated with at least one anticorrosion layer - according to an
 alternative form of embodiment, this can be left out - and then with at
 least one layer of a paint-like coating containing polymers. After
 being coated with at least one anticorrosion layer or after
 being coated with at least one layer of a paint-like
 coating, the strip is divided into strip sections. The
 coated strip sections are then formed, joined and/or
 coated with at least one (other) paint-like coating
 and/or paint coating. The paint-like coating is
 formed by coating the surface with an aqueous dispersion containing the
 following in addition to water: (a) at least one organic film former containing at
 least one water-soluble or water-dispersed polymer with an acid value of 5
 to 200; (b) at least one inorg. compound in particle form with an average
 particle diameter measured on a scanning electron microscope of 0.005 to 0.3
 µm; and (c) at least one lubricant and/or at least one corrosion
 inhibitor. The metallic surface that is optionally
 coated with at least one anticorrosion layer is brought into
 contact with the aqueous composition and a film containing particles is formed on
 the
 metallic surface, this film then being dried and optionally also
 hardened, the dried and optionally, also hardened film having a layer
 thickness of 0.01 to 10 µm. The speed of coating
 metal objects with complex profiles is high using this process
 and need of Cr6+ compds. and acids is reduced. The coated
 products are useful in manufacture of automobile bodies, aircraft, and
 spacecraft.

SUPPL. TERM: acidic polymer water thinned pretreatment
 metal substrate anticorrosive coating
 ; spacecraft metal substrate anticorrosive
 coating; aircraft metal substrate
 anticorrosive coating; automobile body
 metal substrate anticorrosive coating
 ; chromium free inorg compd pretreatment metal
 substrate anticorrosive coating; lubricant
 pretreatment metal substrate anticorrosive
 coating

INDEX TERM: Polyesters, uses
 ROLE: TEM (Technical or engineered material use); USES
 (Uses)
 (acrylic-polyurethane-; pretreating and/or
 coating metallic surfaces with a
 paint-like coating prior to forming for
 prevention of corrosion of formed coated
 product)

INDEX TERM: Alcohols, uses
ROLE: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(amino, corrosion inhibitor; pretreating and/or coating metallic surfaces with a paint-like coating prior to forming for prevention of corrosion of formed coated product)

INDEX TERM: Polysiloxanes, uses
ROLE: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(anticorrosive primer; pretreating and/or coating metallic surfaces with a paint-like coating prior to forming for prevention of corrosion of formed coated product)

INDEX TERM: Alcohols, uses
Phosphates, uses
Silanes
ROLE: TEM (Technical or engineered material use); USES (Uses)
(anticorrosive primer; pretreating and/or coating metallic surfaces with a paint-like coating prior to forming for prevention of corrosion of formed coated product)

INDEX TERM: Coating materials
(anticorrosive, water-thinned; pretreating and/or coating metallic surfaces with a paint-like coating prior to forming for prevention of corrosion of formed coated product)

INDEX TERM: Automobiles
(bodies; pretreating and/or coating metallic surfaces with a paint-like coating prior to forming for prevention of corrosion of formed coated product)

INDEX TERM: Polyesters, uses
ROLE: TEM (Technical or engineered material use); USES (Uses)
(carboxy-containing; pretreating and/or coating metallic surfaces with a paint-like coating prior to forming for prevention of corrosion of formed coated product)

INDEX TERM: Coating process
(coil; pretreating and/or coating metallic surfaces with a paint-like coating prior to forming for prevention of corrosion of formed coated product)

INDEX TERM: Conducting polymers
(corrosion inhibitor; pretreating and/or coating metallic surfaces with a paint-like coating prior to forming for prevention of corrosion of formed coated product)

INDEX TERM: Thiols, uses
ROLE: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(corrosion inhibitor; pretreating and/or coating metallic surfaces with a

paint-like coating prior to forming for prevention of corrosion of formed coated product)

- INDEX TERM: Minerals, uses
ROLE: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(hydrotalcite-group; pretreating and/or coating metallic surfaces with a paint-like coating prior to forming for prevention of corrosion of formed coated product)
- INDEX TERM: Polysiloxanes, uses
ROLE: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(polyester-; pretreating and/or coating metallic surfaces with a paint-like coating prior to forming for prevention of corrosion of formed coated product)
- INDEX TERM: Acrylic polymers, uses
ROLE: TEM (Technical or engineered material use); USES (Uses)
(polyester-polyurethane-; pretreating and/or coating metallic surfaces with a paint-like coating prior to forming for prevention of corrosion of formed coated product)
- INDEX TERM: Polyesters, uses
ROLE: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(polysiloxane-; pretreating and/or coating metallic surfaces with a paint-like coating prior to forming for prevention of corrosion of formed coated product)
- INDEX TERM: Aircraft
Space vehicles
(pretreating and/or coating metallic surfaces with a paint-like coating prior to forming for prevention of corrosion of formed coated product)
- INDEX TERM: Carbonates, uses
Oxides (inorganic), uses
Paraffin waxes, uses
Rare earth oxides
Silicates, uses
Sulfates, uses
ROLE: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(pretreating and/or coating metallic surfaces with a paint-like coating prior to forming for prevention of corrosion of formed coated product)
- INDEX TERM: Aminoplasts
ROLE: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(pretreating and/or coating metallic surfaces with a paint-like coating prior to forming for prevention of corrosion of formed coated product)
- INDEX TERM: Polyesters, uses

ROLE: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(pretreating and/or coating
metallic surfaces with a paint-like
coating prior to forming for prevention of
corrosion of formed coated product)

INDEX TERM: Polyurethanes, uses
ROLE: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(pretreating and/or coating
metallic surfaces with a paint-like
coating prior to forming for prevention of
corrosion of formed coated product)

INDEX TERM: Galvanized steel
ROLE: MSC (Miscellaneous)
(substrate; pretreating and/or coating
metallic surfaces with a paint-like
coating prior to forming for prevention of
corrosion of formed coated product)

INDEX TERM: Adhesives
Inks
(top layer; pretreating and/or coating
metallic surfaces with a paint-like
coating prior to forming for prevention of
corrosion of formed coated product)

INDEX TERM: Aluminum alloy, base
Copper alloy, base
Iron alloy, base
Magnesium alloy, base
Nickel alloy, base
Tin alloy, base
Titanium alloy, base
Zinc alloy, base
ROLE: MSC (Miscellaneous)
(substrate; pretreating and/or coating
metallic surfaces with a paint-like
coating prior to forming for prevention of
corrosion of formed coated product)

INDEX TERM: 12597-69-2, Steel, miscellaneous
ROLE: MSC (Miscellaneous)
(Galvalume-plated, substrate; pretreating and/or
coating metallic surfaces with a
paint-like coating prior to forming for
prevention of corrosion of formed coated
product)

INDEX TERM: 9003-01-4, Polyacrylic acid
ROLE: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(anticorrosive primer; pretreating and/or
coating metallic surfaces with a
paint-like coating prior to forming for
prevention of corrosion of formed coated
product)

INDEX TERM: 598-62-9, Manganese carbonate 674-70-4 674-71-5
763-26-8 919-30-2, 3-Aminopropyltriethoxysilane
1429-50-1, Ethylenediaminetetramethylenephosphonic
acid 3071-50-9 4546-06-9, p-Xylylenediphosphonic
acid 4671-77-6, 1,4-Butanediphosphonic acid
4721-22-6, 1,6-Hexanediphosphonic acid 5943-21-5,
1,10-Decanediphosphonic acid 5943-66-8,

1,8-Octanediphosphonic acid 6419-19-8,
 Aminotrimethylenephosphonic acid 7429-90-5D,
 Aluminum, compds. 7439-89-6D, Iron, compds.
 7439-95-4D, Magnesium, compds. 7439-96-5D,
 Manganese, compds. 7439-98-7D, Molybdenum, compds.
 7440-02-0D, Nickel, compds. 7440-32-6D, Titanium,
 compds. 7440-33-7D, Tungsten, compds. 7440-47-3D,
 Chromium, compds. 7440-48-4D, Cobalt, compds.
 7440-58-6D, Hafnium, compds. 7440-67-7D, Zirconium,
 compds. 7450-59-1, 1,12-Dodecanediphosphonic acid
 11101-13-6 12021-95-3 12781-95-2 15827-60-8,
 Diethylenetriaminepentamethylenephosphonic acid
 16068-37-4, 1,2-Bis(
 triethoxysilyl)ethane 21645-51-2,
 Aluminum hydroxide, uses 23605-74-5 37971-36-1,
 2-Phosphonobutane-1,2,4-tricarboxylic acid
 50421-68-6 74748-16-6 85590-01-8 151861-26-6
 159239-33-5, 12-Mercaptododecylphosphonic acid
 198065-35-9, 12-(Ethylamino)dodecanephosphonic acid
 210237-15-3 216106-45-5 378232-64-5 412916-50-8
 412916-52-0 412916-54-2

ROLE: TEM (Technical or engineered material use); USES
 (Uses)

(anticorrosive primer; pretreating and/or
 coating metallic surfaces with a
 paint-like coating prior to forming for
 prevention of corrosion of formed coated
 product)

INDEX TERM: 50-21-5D, Lactic acid, titanium complexes
 4619-20-9D, zirconium complexes 7585-20-8, Zirconium
 acetate 7789-09-5, Ammonium dichromate 15879-01-3,
 Triethanolamine titanate 22829-17-0, Ammonium
 zirconium carbonate 38497-57-3, Titanium acetate
 73215-17-5 133962-46-6

ROLE: MOA (Modifier or additive use); TEM (Technical
 or engineered material use); USES (Uses)

(corrosion inhibitor; pretreating and/or
 coating metallic surfaces with a
 paint-like coating prior to forming for
 prevention of corrosion of formed coated
 product)

INDEX TERM: 1306-38-3, Cerium dioxide, uses 1314-13-2, Zinc
 oxide, uses 1314-23-4, Zirconia, uses 1314-36-9,
 Yttrium oxide, uses 1343-98-2, Silicic acid
 1344-28-1, Aluminum oxide, uses 7439-91-0D,
 Lanthanum, compds. 7440-70-2D, Calcium, compds.
 7631-86-9, Silica, uses 7727-43-7, Barium sulfate
 13463-67-7, Titania, uses

ROLE: MOA (Modifier or additive use); TEM (Technical
 or engineered material use); USES (Uses)

(pretreating and/or coating
 metallic surfaces with a paint-like
 coating prior to forming for prevention of
 corrosion of formed coated product)

INDEX TERM: 79-10-7D, Acrylic acid, esters, polymers with epoxy
 group-containing compds. 9002-89-5, Polyvinyl alcohol
 9003-39-8, Polyvinylpyrrolidone 9010-77-9,
 Ethylene-acrylic acid copolymer 9011-05-6, Urea
 resin 25608-40-6, Polyaspartic acid 26063-13-8,
 Polyaspartic acid 59269-51-1, Polyvinylphenol

ROLE: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(pretreating and/or coating
metallic surfaces with a paint-like
coating prior to forming for prevention of
corrosion of formed coated product)

INDEX TERM: 9003-55-8D, Butadiene-styrene copolymer, carboxy
derivs.

ROLE: TEM (Technical or engineered material use); USES
(Uses)
(pretreating and/or coating
metallic surfaces with a paint-like
coating prior to forming for prevention of
corrosion of formed coated product)

INDEX TERM: 62112-96-3, Galvalume 66184-45-0, ST 1405,
miscellaneous

ROLE: MSC (Miscellaneous)
(substrate; pretreating and/or coating
metallic surfaces with a paint-like
coating prior to forming for prevention of
corrosion of formed coated product)

INDEX TERM: 9002-86-2, PVC

ROLE: TEM (Technical or engineered material use); USES
(Uses)
(top layer; pretreating and/or coating
metallic surfaces with a paint-like
coating prior to forming for prevention of
corrosion of formed coated product)

INDEX TERM: 9002-88-4D, Polyethylene, oxidized 9003-07-0,
Polypropylene

ROLE: MOA (Modifier or additive use); TEM (Technical
or engineered material use); USES (Uses)
(wax; pretreating and/or coating
metallic surfaces with a paint-like
coating prior to forming for prevention of
corrosion of formed coated product)

OS.CITING REF COUNT: 13 THERE ARE 13 CAPLUS RECORDS THAT CITE THIS
RECORD (13 CITINGS)

DATE LAST CITED: Date last citing reference entered STN: 06 Nov 2009

OS.CITING.REFS: CAPLUS 2009:1331045; 2009:1155885; 2006:362527;
2006:407728; 2008:1337784; 2008:614721;
2008:587602; 2008:190635; 2006:730131;
2006:517168; 2005:1154082; 2004:634000;
2004:80794

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS
RECORD.

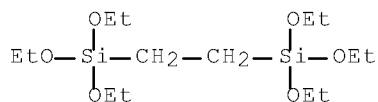
REFERENCE(S): (1) Basf Corp; EP 0551568 A 1993 HCAPLUS
(2) Jose, B; US 5700523 A 1997 HCAPLUS
(3) Kawasaki Steel Co; EP 0344717 A 1989 HCAPLUS
(4) Rivera, J; US 5905105 A 1999 HCAPLUS

IT 16068-37-4, 1,2-Bis(triethoxysilyl)
ethane

RL: TEM (Technical or engineered material use); USES (Uses)
(anticorrosive primer; pretreating and/or coating
metallic surfaces with a paint-like coating
prior to forming for prevention of corrosion of formed
coated product)

RN 16068-37-4 HCAPLUS

CN 3,8-Dioxa-4,7-disiladecane, 4,4,7,7-tetraethoxy- (CA INDEX NAME)



L41 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2001:463322 HCAPLUS Full-text

DOCUMENT NUMBER: 135:62745

ENTRY DATE: Entered STN: 27 Jun 2001

TITLE: Articles ~~coated~~ with sol-gel oxides
and production methods therefor

INVENTOR(S): Kamiya, Kazutaka; Yamamoto, Hiroaki

PATENT ASSIGNEE(S): Nippon Sheet Glass Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

INT. PATENT CLASSIF.:

MAIN: C09D201-00
 SECONDARY: B32B009-00; C01B013-14; C01B033-12; C03C017-25;
 C09D183-14; C09D185-00; C23C030-00; B05D007-00

CLASSIFICATION: 42-10 (Coatings, Inks, and Related Products)
Section cross-reference(s): 57

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001172573	A	20010626	JP 1999-359380	19991217

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PRIORITY APPLN. INFO.: JP 1999-359380

19991217

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PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2001172573	ICM	C09D201-00
	ICS	B32B009-00; C01B013-14; C01B033-12; C03C017-25; C09D183-14; C09D185-00; C23C030-00; B05D007-00
	IPCI	C09D0201-00 [ICM, 7]; B32B0009-00 [ICS, 7]; C01B0013-14 [ICS, 7]; C01B0033-12 [ICS, 7]; C03C0017-25 [ICS, 7]; C09D0183-14 [ICS, 7]; C09D0185-00 [ICS, 7]; C23C0030-00 [ICS, 7]; B05D0007-00 [ICS, 7]
	IPCR	B05D0007-00 [I, C*]; B05D0007-00 [I, A]; B32B0009-00 [I, C*]; B32B0009-00 [I, A]; C01B0013-14 [I, C*]; C01B0013-14 [I, A]; C01B0033-00 [I, C*]; C01B0033-12 [I, A]; C03C0017-25 [I, C*]; C03C0017-25 [I, A]; C09D0183-14 [I, C*]; C09D0183-14 [I, A]; C09D0185-00 [I, C*]; C09D0185-00 [I, A]; C09D0201-00 [I, C*]; C09D0201-00 [I, A];

C23C0030-00 [I,C*]; C23C0030-00 [I,A]

ABSTRACT:

Oxide ~~coatings~~ contain alkylene groups. Thus, glass was
coated with a solution containing tetraethoxysilane 3.4,
bis(triethoxysilyl)methane 0.034, HCl 2, and ethanol to 100 g.

SUPPL. TERM: silica sol gel ~~coating~~ glass; ethoxysilane
ethoxysilylmethane copolymer ~~coating~~ glass

INDEX TERM: ~~Coating~~ materials
(abrasion-resistant; sol-gel oxides for
~~coating~~ materials)

INDEX TERM: Silanes
ROLE: IMF (Industrial manufacture); PRP (Properties);
TEM (Technical or engineered material use); PREP
(Preparation); USES (Uses)
(alkoxy, polymers; sol-gel oxides for
~~coating~~ materials)

INDEX TERM: Oxides (inorganic), uses
ROLE: IMF (Industrial manufacture); PRP (Properties);
TEM (Technical or engineered material use); PREP
(Preparation); USES (Uses)
(alkylene group-containing; sol-gel oxides for
~~coating~~ materials)

INDEX TERM: Polysiloxanes, uses
ROLE: IMF (Industrial manufacture); POF (Polymer in
formulation); PRP (Properties); TEM (Technical or
engineered material use); PREP (Preparation); USES
(Uses)
(fluorine-containing; sol-gel oxides for
~~coating~~ materials)

INDEX TERM: Polymerization
(hydrolytic; sol-gel oxides for ~~coating~~
materials)

INDEX TERM: Fluoropolymers, uses
ROLE: IMF (Industrial manufacture); POF (Polymer in
formulation); PRP (Properties); TEM (Technical or
engineered material use); PREP (Preparation); USES
(Uses)
(polysiloxane-; sol-gel oxides for
~~coating~~ materials)

INDEX TERM: Sol-gel processing
(sol-gel oxides for ~~coating~~ materials)

INDEX TERM: Polysiloxanes, uses
ROLE: IMF (Industrial manufacture); POF (Polymer in
formulation); PRP (Properties); TEM (Technical or
engineered material use); PREP (Preparation); USES
(Uses)
(sol-gel oxides for ~~coating~~ materials)

INDEX TERM: Chlorides, reactions
Metal alkoxides
ROLE: RCT (Reactant); RACT (Reactant or reagent)
(sol-gel oxides for ~~coating~~ materials)

INDEX TERM: 7699-43-6DP, Zirconium oxychloride, reaction products
with alkoxysilanes 7786-30-3DP, Magnesium chloride,
reaction products with alkoxysilanes 10043-35-3DP,
Boric acid, reaction products with alkoxysilanes
10043-52-4DP, Calcium chloride, reaction products with
alkoxysilanes 159412-13-2P,
Poly(perfluorooctylethyltrimethoxysilane)
281189-87-5P, Bis(triethoxysilyl)methane-

tetraethoxysilane copolymer 286930-85-6P,
Bis(triethoxysilyl)ethane
-tetraethoxysilane copolymer 345970-19-6P
345970-20-9P 345970-21-0P
ROLE: IMF (Industrial manufacture); PRP (Properties);
TEM (Technical or engineered material use); PREP
(Preparation); USES (Uses)

(sol-gel oxides for coating materials)
INDEX TERM: 1303-86-2, Boric oxide, uses 1305-78-8, Calcium
oxide, uses 1309-48-4, Magnesium oxide, uses
1314-23-4, Zirconium oxide, uses 1344-28-1, Alumina,
uses 7631-86-9, Silica, uses
ROLE: TEM (Technical or engineered material use); USES
(Uses)
(sol-gel oxides for coating materials)

L41 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1999:315655 HCAPLUS Full-text
DOCUMENT NUMBER: 131:89102
ENTRY DATE: Entered STN: 24 May 1999
TITLE: Improved service life of coated
metals by engineering the polymer-
metal interface
AUTHOR(S): Van Ooij, W. J.
CORPORATE SOURCE: Department of Materials Science and Engineering,
University of Cincinnati, Cincinnati, OH,
45221-0012, USA
SOURCE: ACS Symposium Series (1999),
722(Service Life Prediction of Organic
Coatings), 354-377
CODEN: ACSMC8; ISSN: 0097-6156
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
CLASSIFICATION: 42-10 (Coatings, Inks, and Related Products)
Section cross-reference(s): 56

ABSTRACT:
Control of the overall corrosion rate by polyester and polyurethane
powder coatings and improvement of the service life of
coated metals are described. Examples are given of
coated cold-rolled steel, galvanized steel and Galvalume, where
the interface was modified and the performance of the system increased.
Interface modification was done by depositing a thin film of a
plasma-polymerized pyrrole and hexamethyldisiloxane or by
depositing thin films of organofunctional silanes. EIS and accelerated
corrosion tests measured the corrosion rates of the coated
systems. Pretreatments of metals based on plasma or silane
treatments improve the service life of the coated metal
systems.

SUPPL. TERM: polyester powder coating metal
corrosion protection; polyurethane powder
coating silane surface modification
metal; conducting polymer surface
metal powder anticorrosion coating

INDEX TERM: Conducting polymers
(anticorrosion coating system of powder
coating and silane and conducting polymer
for improved service life of coated
metals)

INDEX TERM: Galvanized steel
ROLE: NUU (Other use, unclassified); USES (Uses)
(anticorrosion coating system of powder
coating and silane and conducting polymer
for improved service life of coated
metals)

INDEX TERM: Polyesters, uses
ROLE: TEM (Technical or engineered material use); USES
(Uses)
(anticorrosion coating system of powder
coating and silane and conducting polymer
for improved service life of coated
metals)

INDEX TERM: Polyurethanes, uses
ROLE: TEM (Technical or engineered material use); USES
(Uses)
(anticorrosion coating system of powder
coating and silane and conducting polymer
for improved service life of coated
metals)

INDEX TERM: Coating materials
(anticorrosive; anticorrosion coating
system of powder coating and silane and
conducting polymer for improved service life of
coated metals)

INDEX TERM: Polymers, uses
ROLE: PNU (Preparation, unclassified); TEM (Technical
or engineered material use); PREP (Preparation); USES
(Uses)
(polypyrroles; anticorrosion coating
system of powder coating and silane and
conducting polymer for improved service life of
coated metals)

INDEX TERM: Coating materials
(powder; anticorrosion coating system of
powder coating and silane and conducting
polymer for improved service life of coated
metals)

INDEX TERM: 62112-96-3, Galvalume
ROLE: NUU (Other use, unclassified); USES (Uses)
(anticorrosion coating system of powder
coating and silane and conducting polymer
for improved service life of coated
metals)

INDEX TERM: 26298-61-3P, Hexamethyldisiloxane polymer
30604-81-0P, Polypyrrole
ROLE: PNU (Preparation, unclassified); TEM (Technical
or engineered material use); PREP (Preparation); USES
(Uses)
(anticorrosion coating system of powder
coating and silane and conducting polymer
for improved service life of coated
metals)

INDEX TERM: 2768-02-7, Vinyltrimethoxysilane 16068-37-4
, Bis-1,2-(triethoxysilyl)
ethane
ROLE: TEM (Technical or engineered material use); USES
(Uses)
(anticorrosion coating system of powder
coating and silane and conducting polymer

for improved service life of coated
metals)

INDEX TERM:

12597-69-2, Steel, uses

ROLE: NUU (Other use, unclassified); USES (Uses)

(cold-rolled; anticorrosion coating
system of powder coating and silane and
conducting polymer for improved service life of
coated metals)

OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD
(2 CITINGS)

DATE LAST CITED: Date last citing reference entered STN: 16 Feb 2009

OS.CITING.REFS: CAPLUS 2002:260979; 2001:165360

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS
RECORD.

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HCAPLUS
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1997
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HCAPLUS
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Proceedings 354 1996, P305 HCAPLUS
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Interfaces: Characterization Modification and
Application 1997, P319 HCAPLUS
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HCAPLUS
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HCAPLUS
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P29

IT 16068-37-4, Bis-1,2-(triethoxysilyl)
ethane

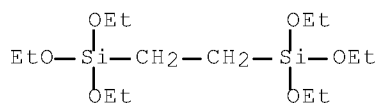
RL: TEM (Technical or engineered material use); USES (Uses)

(anticorrosion coating system of powder coating
and silane and conducting polymer for improved service life of

(coated metals)

RN 16068-37-4 HCAPLUS

CN 3,8-Dioxa-4,7-disiladecane, 4,4,7,7-tetraethoxy- (CA INDEX NAME)



L41 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1995:833080 HCAPLUS Full-text

DOCUMENT NUMBER: 123:231489

ORIGINAL REFERENCE NO.: 123:41297a,41300a

ENTRY DATE: Entered STN: 05 Oct 1995

TITLE: Curable ~~siloxane~~ composition
containing adhesion promoters

INVENTOR(S): Kasuya, Akira

PATENT ASSIGNEE(S): Dow Corning Toray Silicone Co., Ltd., Japan

SOURCE: Eur. Pat. Appl., 12 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

INT. PATENT CLASSIF.:

MAIN: C09J011-06

SECONDARY: C09J183-08

CLASSIFICATION: 42-10 (Coatings, Inks, and Related Products)
Section cross-reference(s): 38

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 653472	A2	19950517	EP 1994-118060	199411 15
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EP 653472	A3	19960904		
EP 653472	B1	20000119		
R: DE, ES, FR, GB, IT				
JP 07138535	A	19950530	JP 1993-311263	199311 17
			<--	
JP 07138482	A	19950530	JP 1993-311264	199311 17
			<--	
US 5445891	A	19950829	US 1994-338913	199411 14
			<--	
ES 2144029	T3	20000601	ES 1994-118060	199411 15
			<--	

March 21, 2010

10/534,560

81

US 5527932

A

19960618

US 1995-434631

199505
04

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PRIORITY APPLN. INFO.:

JP 1993-311263

A

199311
17

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JP 1993-311264

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US 1994-338913

A3

199411
14

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PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 653472	ICM	C09J011-06
	ICS	C09J183-08
	IPCI	C09J0011-06 [ICM,6]; C09J0011-02 [ICM,6,C*]; C09J0183-08 [ICS,6]; C09J0183-00 [ICS,6,C*]
	IPCR	C08K0005-00 [I,C*]; C08K0005-1515 [I,A]; C08L0083-00 [I,C*]; C08L0083-04 [I,A]; C09J0011-02 [I,C*]; C09J0011-06 [I,A]; C09J0183-00 [I,C*]; C09J0183-07 [I,A]
	ECLA	C08K005/1515+L83/04; C08L083/04+B4S+C8; C08L083/04+B4S+C; C09J011/06
JP 07138535	IPCI	C09J0005-02 [ICM,6]; C09J0183-04 [ICS,6]; C09J0183-00 [ICS,6,C*]
	IPCR	C09J0005-02 [I,C*]; C09J0005-02 [I,A]; C09J0183-00 [I,C*]; C09J0183-00 [I,A]; C09J0183-04 [I,A]
JP 07138482	IPCI	C08L0083-07 [ICM,6]; C08K0005-17 [ICS,6]; C08K0005-54 [ICS,6]; C08K0005-00 [ICS,6,C*]; C08L0083-05 [ICS,6]; C08L0083-00 [ICS,6,C*]
	IPCR	C08K0005-17 [I,A]; C08K0005-00 [I,C*]; C08K0005-54 [I,A]; C08K0005-544 [I,A]; C08L0083-00 [I,C*]; C08L0083-05 [I,A]; C08L0083-07 [I,A]
US 5445891	IPCI	B32B0015-08 [ICM,6]
	IPCR	C08K0005-00 [I,C*]; C08K0005-1515 [I,A]; C08L0083-00 [I,C*]; C08L0083-04 [I,A]; C09J0011-02 [I,C*]; C09J0011-06 [I,A]; C09J0183-00 [I,C*]; C09J0183-07 [I,A]
	NCL	428/450.000; 428/447.000; 524/188.000; 524/243.000
	ECLA	C08K005/1515+L83/04; C08L083/04+B4S+C; C08L083/04+B4S+C8; C09J011/06
ES 2144029	IPCI	C08K0005-15 [ICS,7]; C08L0083-04 [ICS,7]; C08L0083-00 [ICS,7,C*]; C08K0005-54 [ICS,7]; C08K0005-00 [ICS,7,C*]
	IPCR	C08K0005-00 [I,C*]; C08K0005-1515 [I,A]; C08L0083-00 [I,C*]; C08L0083-04 [I,A]; C09J0011-02 [I,C*]; C09J0011-06 [I,A]; C09J0183-00 [I,C*]; C09J0183-07 [I,A]
	ECLA	C08K005/1515+L83/04; C08L083/04+B4S+C; C08L083/04+B4S+C8; C09J011/06
US 5527932	IPCI	C07F0007-10 [ICM,6]; C07F0007-00 [ICM,6,C*]

IPCR C08K0005-00 [I,C*]; C08K0005-1515 [I,A];
C08L0083-00 [I,C*]; C08L0083-04 [I,A];
C09J0011-02 [I,C*]; C09J0011-06 [I,A]
NCL 556/423.000
ECLA C08K005/1515+L83/04; C08L083/04+B4S+C;
C08L083/04+B4S+C8; C09J011/06

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): CASREACT 123:231489; MARPAT 123:231489

ABSTRACT:

The compns. suitable for forming an adherent coating on

metals which is durable under acidic conditions, comprise (A) a

siloxane containing ≥ 2 alkenyl groups in each mol.; (B) a

siloxane containing ≥ 2 Si-bonded hydrogen atoms in each mol.;

(C) an adhesion promoter; and (D) a hydrosilylation catalyst. The

adhesion promoters are prepared by reacting (a) an amine $R_nNH(3-n)$ (R =

monovalent hydrocarbon group; $n = 1, 2$), and (b) an aliphatic unsatd. epoxy

compound, and optionally, condensing the above reaction product with (C) a

Si compound containing ≥ 2 Si-bonded alkoxy groups in each mol.

SUPPL. TERM: adhesion promoter curable siloxane; adherent
coating metal siloxane;
vinyl group terminated siloxane curing;
amine epoxy compd reaction product; acid resistance
siloxane coating

INDEX TERM: Adhesives
(curable siloxane compns. containing adhesion
promoters)

INDEX TERM: Coating materials
(curable siloxane compns. containing adhesion
promoters for metal coatings)

INDEX TERM: Metals, miscellaneous
ROLE: MSC (Miscellaneous)
(curable siloxane compns. containing adhesion
promoters for metal coatings)

INDEX TERM: Siloxanes and Silicones, uses
ROLE: TEM (Technical or engineered material use); USES
(Uses)
(curable siloxane compns. containing adhesion
promoters for metal coatings)

INDEX TERM: Epoxides
ROLE: MOA (Modifier or additive use); USES (Uses)
(reaction products with amines, adhesion promoters;
curable siloxane compns. containing adhesion
promoters for metal coatings)

INDEX TERM: Siloxanes and Silicones, reactions
ROLE: RCT (Reactant); RACT (Reactant or reagent)
(Me hydrogen, curable siloxane compns.
containing adhesion promoters for metal
coatings)

INDEX TERM: Siloxanes and Silicones, reactions
ROLE: RCT (Reactant); RACT (Reactant or reagent)
(di-Me, vinyl group-terminated, curable
siloxane compns. containing adhesion promoters
for metal coatings)

INDEX TERM: Amines, uses
ROLE: MOA (Modifier or additive use); USES (Uses)
(reaction products, with epoxy compds., adhesion
promoters; curable siloxane compns.
containing adhesion promoters for metal

coatings)

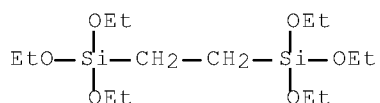
INDEX TERM: 74-89-5D, Methylamine, reaction products with epoxy compds. 75-04-7D, Ethanamine, reaction products with epoxy compds. 75-64-9D, tert-Butylamine, reaction products with epoxy compds. 78-10-4D, reaction products with amines and epoxy compds. 100-61-8D, Methylaniline, reaction products with epoxy compds. 106-86-5D, reaction products with amines 106-90-1D, reaction products with amines 106-91-2D, reaction products with amines 107-10-8D, Propylamine, reaction products with epoxy compds. 109-73-9D, Butylamine, reaction products with epoxy compds. 109-89-7D, reaction products with epoxy compds. 111-92-2D, Dibutylamine, reaction products with epoxy compds. 124-02-7D, reaction products with epoxy compds. 124-40-3D, reaction products with epoxy compds. 1112-39-6D, Dimethyldimethoxysilane, reaction products with amines and epoxy compds. 1185-55-3D, reaction products with amines and epoxy compds. 2530-83-8D, 3-Glycidoxypentyltrimethoxysilane, reaction products with aminopropyltriethoxysilane 2530-85-0D, reaction products with amines and epoxy compds. 2768-02-7D, Vinyltrimethoxysilane, reaction products with amines and epoxy compds. 2996-92-1D, reaction products with amines and epoxy compds. 3027-21-2D, reaction products with aminopropyltriethoxysilane 3076-99-1 6245-53-0D, reaction products with epoxy compds. 6843-66-9D, reaction products with aminopropyltriethoxysilane 16068-37-4D, reaction products with aminopropyltriethoxysilane 17861-40-4D, reaction products with amines and epoxy compds. 18001-64-4D, reaction products with amines and epoxy compds. 18406-41-2D, reaction products with amines and epoxy compds. 21981-37-3D, Di(tert-butyl)amine, reaction products with epoxy compds. 60021-86-5D, reaction products with aminopropyltriethoxysilane 82806-40-4D, Butenylamine, reaction products with epoxy compds. 98789-40-3D, reaction products with amines and epoxy compds. 102772-96-3D, reaction products with amines 120007-27-4D, reaction products with amines and epoxy compds. 168471-58-7 168471-59-8 168471-60-1 168471-61-2D, reaction products with amines and epoxy compds. 168471-62-3D, reaction products with amines 168471-63-4D, reaction products with amines 168471-64-5D, reaction products with amines 168471-65-6D, reaction products with amines

ROLE: MOA (Modifier or additive use); USES (Uses)
(adhesion promoters; curable siloxane compns. containing adhesion promoters for metal coatings)

INDEX TERM: 919-30-2D, 3-Aminopropyltriethoxysilane, reaction products with glycidoxypentyltrimethoxysilane 2551-83-9D, Allyltrimethoxysilane, reaction products with amines and epoxy compds. 5314-55-6D, Ethyltrimethoxysilane, reaction products with amines and epoxy compds. 16753-62-1D, reaction products with amines and epoxy compds.

ROLE: MOA (Modifier or additive use); USES (Uses)

(curable siloxane compns. containing adhesion promoters for metal coatings)
INDEX TERM: 62-53-3, Benzenamine, reactions 106-92-3 107-11-9,
2-Propen-1-amine 681-84-5 26403-67-8 59942-04-0
87135-01-1 155665-02-4D, trimethylsiloxy
group-terminated 158865-52-2D, trimethylsiloxy
group-terminated
ROLE: RCT (Reactant); RACT (Reactant or reagent)
(curable siloxane compns. containing adhesion promoters for metal coatings)
OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD
(2 CITINGS)
DATE LAST CITED: Date last citing reference entered STN: 16 Feb 2009
OS.CITING.REFS: CAPLUS 2007:225292; 2000:12704
IT 16068-37-4D, reaction products with
aminopropyltriethoxysilane
RL: MOA (Modifier or additive use); USES (Uses)
(adhesion promoters; curable siloxane compns. containing
adhesion promoters for metal coatings)
RN 16068-37-4 HCAPLUS
CN 3,8-Dioxa-4,7-disiladecane, 4,4,7,7-tetraethoxy- (CA INDEX NAME)



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L42 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2005:97830 HCAPLUS Full-text
DOCUMENT NUMBER: 142:200188
ENTRY DATE: Entered STN: 04 Feb 2005
TITLE: Preparation of a coating composition
for easy-to-clean or antifogging surfaces based
on rapidly hydrolyzable silanes without
releasing toxic reaction products
INVENTOR(S): Nonninger, Ralph; Koehler, Sabine
PATENT ASSIGNEE(S): ItN Nanovation GmbH, Germany
SOURCE: Ger. Offen., 4 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
INT. PATENT CLASSIF.:
MAIN: C09D183-06
SECONDARY: C09D007-04; C09K003-18
CLASSIFICATION: 42-10 (Coatings, Inks, and Related Products)
Section cross-reference(s): 38, 57
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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DE 10330744	A1	20050203	DE 2003-10330744	

200307
07

PRIORITY APPLN. INFO.:

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DE 2003-10330744200307
07

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PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
DE 10330744	ICM	C09D183-06
	ICS	C09D007-04; C09K003-18
	IPCI	C09D0183-06 [ICM,7]; C09D0007-04 [ICS,7]; C09K0003-18 [ICS,7]
	IPCR	C03C0017-00 [I,C*]; C03C0017-00 [I,A]; C03C0017-02 [I,C*]; C03C0017-02 [I,A]; C09D0004-00 [I,C*]; C09D0004-00 [I,A]
	ECLA	C09D183/08+F; C03C017/00D2; C03C017/02; C09D004/00+C08G77/04; C09D183/06+F; M03C; M03C

OTHER SOURCE(S): MARPAT 142:200188

ABSTRACT:

The title **coating** composition comprising at least one hydrolyzable silicon compound R₁CH₂SiR₂yR₃-y (R₁ = methacryloxy, glycidylloxy, isocyanato, carbamate, or NZaZ'³-a with Z and/or Z' =H, alk(en)yl, aminoalkyl, aryl, and a = 0-3; R₂ = alkyl; R₃ = ethoxy, n-propoxy, iso-propoxy, Cl; and y = 0 or 1) and ceramic particles of particle size <50 nm, is suitable for **coating** glass, ceramic, stone, *****metal*****, or plastic **surfaces**. Thus, 314.4 g (glycidylloxymethyl)triethoxysilane was mixed with 41.6 g tetraethoxysilane and 31.8 g (perfluorooctyl)triethoxysilane under dropwise addition of 85.2 g 0.1 M HCl and hydrolyzed for 2 h. Then, 347.5 g Levasil 200 S 30 was added and stirred for 1 h, followed by addition of 11.95 g 3-aminomethyl-methyl-diethoxysilane and stirring for 1 h, addition of 4.25 g diamino-m-xylene and stirring for 1 h, and finally addition of 4 g of a flow control agent and 200 g isopropoxy ethanol to adjust the viscosity. A hydrophobic **coating** easy-to-clean **coating** composition was obtained.

SUPPL. TERM:

coating compn hydrolyzable silane
nanoparticle contg prepn; easy to clean surface
coating silane based; antifogging
coating silane based; glycidylloxymethyl
triethoxysilane hydrophilic hydrophobic
coating compn

INDEX TERM:

Silanes
ROLE: RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
(alkoxy; **coating** composition for easy-to-clean or antifogging surfaces based on hydrolyzable silanes)

INDEX TERM:

Coating materials
(antisoiling; **coating** composition for easy-to-clean or antifogging surfaces based on hydrolyzable silanes)

INDEX TERM:

Coating materials
Glass substrates
(**coating** composition for easy-to-clean or antifogging surfaces based on hydrolyzable silanes)

INDEX TERM:

Polysiloxanes, preparation
ROLE: SPN (Synthetic preparation); PREP (Preparation)

(coating composition for easy-to-clean or antifogging surfaces based on hydrolyzable silanes)

INDEX TERM: Antifogging agents
(coatings; coating composition for easy-to-clean or antifogging surfaces based on hydrolyzable silanes)

INDEX TERM: Coating materials
(hydrophilic coatings; coating composition for easy-to-clean or antifogging surfaces based on hydrolyzable silanes)

INDEX TERM: Nanoparticles
(inorg.; coating composition for easy-to-clean or antifogging surfaces based on hydrolyzable silanes)

INDEX TERM: Coating materials
(scratch-resistant; coating composition for easy-to-clean or antifogging surfaces based on hydrolyzable silanes)

INDEX TERM: Ceramics
(substrates; coating composition for easy-to-clean or antifogging surfaces based on hydrolyzable silanes)

INDEX TERM: Metals, miscellaneous
Plastics, miscellaneous
Stone (construction material)
ROLE: MSC (Miscellaneous)
(substrates; coating composition for easy-to-clean or antifogging surfaces based on hydrolyzable silanes)

INDEX TERM: Coating materials
(water-resistant; coating composition for easy-to-clean or antifogging surfaces based on hydrolyzable silanes)

INDEX TERM: 78-10-4, Tetraethoxysilane 3978-58-3, Diethoxy(methacryloyloxymethyl)methylsilane 5577-72-0, Triethoxy(methacryloyloxymethyl)silane 56899-99-1, (Glycidylloxymethyl)triethoxysilane 101947-16-4, Perfluorooctyltriethoxysilane 215301-24-9, Diethoxy(glycidylloxymethyl)methylsilane
ROLE: RCT (Reactant); RACT (Reactant or reagent)
(coating composition for easy-to-clean or antifogging surfaces based on hydrolyzable silanes)

INDEX TERM: 13463-67-7, Titanium dioxide, uses
ROLE: MOA (Modifier or additive use); USES (Uses)
(nanoparticle; coating composition for easy-to-clean or antifogging surfaces based on hydrolyzable silanes)

INDEX TERM: 1306-38-3, Cerium dioxide, uses 1314-23-4, Zirconium dioxide, uses 1318-23-6, Boehmite 1332-37-2, Iron oxide, uses 1333-88-6, Aluminum cobalt oxide (Al₂CoO₄) 1344-28-1, Alumina, uses 7631-86-9, Levasil 200S30, uses 12042-92-1, Aluminum copper oxide (Al₂CuO₄) 12047-27-7, Barium titanium trioxide, uses 12068-51-8 18282-10-5, Tin dioxide 72060-61-8
ROLE: MOA (Modifier or additive use); USES (Uses)
(nanoparticles; coating composition for easy-to-clean or antifogging surfaces based on hydrolyzable silanes)

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD

(3 CITINGS)

DATE LAST CITED: Date last citing reference entered STN: 01 Mar 2010

OS.CITING.REFS: CAPLUS 2010:210799; 2010:209977; 2009:1044347

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD.

REFERENCE(S): (1) Anon; WO 0164804 A1

(2) Anon; US 4029842 A

(3) Anon; US 6250760 B1

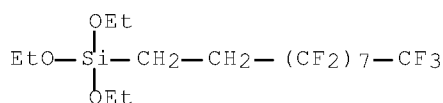
IT 101947-16-4, Perfluorooctyltriethoxysilane

RL: RCT (Reactant); RACT (Reactant or reagent)

(coating composition for easy-to-clean or antifogging surfaces based on hydrolyzable silanes)

RN 101947-16-4 HCAPLUS

CN Silane, triethoxy(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl)- (CA INDEX NAME)



L42 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2004:759183 HCAPLUS Full-text

DOCUMENT NUMBER: 141:268689

ENTRY DATE: Entered STN: 17 Sep 2004

TITLE: Antisoiling optical films with good oil repellency and displays equipped therewith

INVENTOR(S): Oka, Shigeki; Ikeda, Toshiyuki

PATENT ASSIGNEE(S): Konica Minolta Holdings, Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 55 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

INT. PATENT CLASSIF.:

MAIN: G02B001-10
SECONDARY: B05D005-00; B05D007-04; B32B027-00; C08J007-06;
G02B001-11; G02F001-1335; C08L001-10CLASSIFICATION: 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 42, 43, 73

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004258348	A	20040916	JP 2003-49281	20030226

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PRIORITY APPLN. INFO.: JP 2003-49281

20030226

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PATENT CLASSIFICATION CODES:

PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

JP 2004258348 ICM G02B001-10
ICS B05D005-00; B05D007-04; B32B027-00; C08J007-06;
G02B001-11; G02F001-1335; C08L001-10
IPCI G02B0001-10 [ICM,7]; B05D0005-00 [ICS,7];
B05D0007-04 [ICS,7]; B32B0027-00 [ICS,7];
C08J0007-06 [ICS,7]; C08J0007-00 [ICS,7,C*];
G02B0001-11 [ICS,7]; G02F0001-1335 [ICS,7];
G02F0001-13 [ICS,7,C*]; C08L0001-10 [ICS,7];
C08L0001-00 [ICS,7,C*]
IPCR B05D0005-00 [I,A]; B05D0005-00 [I,C*];
B05D0007-04 [I,A]; B05D0007-04 [I,C*];
B32B0027-00 [I,A]; B32B0027-00 [I,C*];
C08J0007-00 [I,C*]; C08J0007-06 [I,A];
G02B0001-10 [I,A]; G02B0001-10 [I,C*];
G02B0001-11 [I,A]; G02F0001-13 [I,C*];
G02F0001-1335 [I,A]
FTERM 2H091/FA37X; 2H091/FA50X; 2H091/FB02; 2H091/FB11;
2H091/GA16; 2H091/LA03; 2H091/LA07; 2K009/AA02;
2K009/CC03; 2K009/CC26; 2K009/CC42; 2K009/DD03;
2K009/EE03; 2K009/EE05; 4D075/AE03; 4D075/BB85Z;
4D075/CA02; 4D075/CA08; 4D075/CA34; 4D075/CB02;
4D075/DA04; 4D075/DB33; 4D075/DB36; 4D075/DB37;
4D075/DB38; 4D075/DB39; 4D075/DB40; 4D075/DB43;
4D075/DB48; 4D075/DB53; 4D075/DB55; 4D075/DC19;
4D075/DC21; 4D075/DC24; 4D075/EA07; 4D075/EA21;
4D075/EB16; 4D075/EB22; 4D075/EB33; 4D075/EB35;
4D075/EB38; 4D075/EB43; 4D075/EB56; 4D075/EC30;
4D075/EC54; 4F006/AA02; 4F006/AB67; 4F006/AB74;
4F006/BA11; 4F006/BA14; 4F006/CA05; 4F006/DA01;
4F100/AA17C; 4F100/AA20; 4F100/AA21; 4F100/AH06;
4F100/AJ06; 4F100/AK25; 4F100/AK52A; 4F100/AL06A;
4F100/AT00B; 4F100/BA02; 4F100/BA03; 4F100/BA07;
4F100/BA10A; 4F100/BA10B; 4F100/EH66C;
4F100/GB41; 4F100/JL06A; 4F100/JN30
OTHER SOURCE(S): MARPAT 141:268689

ABSTRACT:

The optical films (e.g., antireflective films) show soiling resistance obtained by treating their **surfaces** (comprising **metal** oxides prepared by CVD or sol-gel process) with 0.01-10% *****fluoroalkyl***** (ether)-containing **silane** solns. in (environmentally friendly) F-free organic solvents, without loss of optical/mech. properties. The treatment may be proceeded with the above solns. of concentration 0.01-5%, incorporated with 0.01-15% (alkyl)alkoxysilanes or 0.01-5% Si-isocyanates. PH of the solns. may be adjusted to ≤5 by acids.

SUPPL. TERM: cellulose acetate antireflective film antisoiling
coating fluoroalkylsilane; silicon
oxide surface antireflective film antisoiling
coating; display antireflective film
antisoiling oil repellent **coating**;
methoxysilane fluorodecylsilane isopropoxide copolymer
antisoiling **coating**

INDEX TERM: Silanes
ROLE: RCT (Reactant); RACT (Reactant or reagent)
(alkoxy, antisoiling **coatings**;
oxide-surfaced antireflective films equipped with
antisoiling **coatings** of
fluoroalkyl(ether)-containing **silanes**

for displays)
INDEX TERM: Oxides (inorganic), preparation
ROLE: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(antireflective surface layers; oxide-surfaced antireflective films equipped with antisoiling coatings of fluoroalkyl (ether)-containing silanes for displays)
INDEX TERM: Coating materials
(antisoiling; oxide-surfaced antireflective films equipped with antisoiling coatings of fluoroalkyl(ether)-containing silanes for displays)
INDEX TERM: Silanes
ROLE: RCT (Reactant); RACT (Reactant or reagent)
(fluoroalkyl, antisoiling coatings; oxide-surfaced antireflective films equipped with antisoiling coatings of fluoroalkyl(ether)-containing silanes for displays)
INDEX TERM: Acids, uses
ROLE: NUU (Other use, unclassified); USES (Uses)
(for adjusting pH of antisoiling coatings ; oxide-surfaced antireflective films equipped with antisoiling coatings of fluoroalkyl(ether)-containing silanes for displays)
INDEX TERM: Coating materials
(oil-resistant; oxide-surfaced antireflective films equipped with antisoiling coatings of fluoroalkyl(ether)-containing silanes for displays)
INDEX TERM: Antireflective films
Optical imaging devices
(oxide-surfaced antireflective films equipped with antisoiling coatings of fluoroalkyl(ether)-containing silanes for displays)
INDEX TERM: Silsesquioxanes
ROLE: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polysiloxane-, fluorine-containing, antisoiling coatings; oxide-surfaced antireflective films equipped with antisoiling coatings of fluoroalkyl (ether)-containing silanes for displays)
INDEX TERM: Fluoropolymers, preparation
ROLE: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polysiloxane-silsesquioxane-, antisoiling coatings; oxide-surfaced antireflective films equipped with antisoiling coatings of fluoroalkyl (ether)-containing silanes for displays)
INDEX TERM: Isocyanates
ROLE: RCT (Reactant); RACT (Reactant or reagent)
(silicon-containing, antisoiling coatings;

oxide-surfaced antireflective films equipped with
antisoiling coatings of
fluoroalkyl(ether)-containing silanes
for displays)

INDEX TERM: Polysiloxanes, preparation
ROLE: DEV (Device component use); IMF (Industrial
manufacture); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(silsesquioxane-, fluorine-containing, antisoiling
coatings; oxide-surfaced antireflective
films equipped with antisoiling coatings
of fluoroalkyl(ether)-containing
silanes for displays)

INDEX TERM: 9012-09-3, Cellulose triacetate
ROLE: DEV (Device component use); TEM (Technical or
engineered material use); USES (Uses)
(Konica Tac KC 8UF-HA, film substrate;
oxide-surfaced antireflective films equipped with
antisoiling coatings of
fluoroalkyl(ether)-containing silanes
for displays)

INDEX TERM: 7631-86-9P, Silica, preparation 13463-67-7P,
Titanium oxide, preparation
ROLE: DEV (Device component use); IMF (Industrial
manufacture); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(antireflective surface layers; oxide-surfaced
antireflective films equipped with antisoiling
coatings of fluoroalkyl
(ether)-containing silanes for displays)

INDEX TERM: 1320-67-8, Propylene glycol monomethyl ether
ROLE: NUU (Other use, unclassified); USES (Uses)
(antisoiling coatings, solvents;
oxide-surfaced antireflective films equipped with
antisoiling coatings of
fluoroalkyl(ether)-containing silanes
for displays)

INDEX TERM: 187817-23-8P, Dimethyldimethoxysilane-2-
perfluorooctylethyltrimethoxysilane copolymer
756527-29-4P 756527-31-8P
ROLE: DEV (Device component use); IMF (Industrial
manufacture); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(antisoiling coatings; oxide-surfaced
antireflective films equipped with antisoiling
coatings of fluoroalkyl
(ether)-containing silanes for displays)

INDEX TERM: 7697-37-2, Nitric acid, uses
ROLE: NUU (Other use, unclassified); USES (Uses)
(for adjusting pH of antisoiling coatings
; oxide-surfaced antireflective films equipped with
antisoiling coatings of
fluoroalkyl(ether)-containing silanes
for displays)

L42 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2001:747722 HCAPLUS Full-text
DOCUMENT NUMBER: 135:307454
ENTRY DATE: Entered STN: 12 Oct 2001
TITLE: Glass, ceramic, and metal substrates

with a self-cleaning surface made of glass and hydrophobic film

INVENTOR(S): Baumann, Martin; Fritsche, Klaus-dieter; Korbelaar, Dagmar; Ludwig, Stephan; Poth, Lutz

PATENT ASSIGNEE(S): Degussa Metals Catalysts Cerdec AG, Germany

SOURCE: PCT Int. Appl., 27 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: German

INT. PATENT CLASSIF.:
MAIN: C04B041-89
SECONDARY: C03C017-42

CLASSIFICATION: 57-1 (Ceramics)
Section cross-reference(s): 56

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001074739	A1	20011011	WO 2001-EP2790	20010313
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W: BR, CA, JP, KR, MX, PL, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
DE 10016485	A1	20011011	DE 2000-10016485	20000401
<--				
EP 1272442	A1	20030108	EP 2001-925431	20010313
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EP 1272442	B1	20051102		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
AT 308490	T	20051115	AT 2001-925431	20010313
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ES 2251478	T3	20060501	ES 2001-925431	20010313
<--				
US 20030152780	A1	20030814	US 2003-239066	20030116
<--				
US 6872441	B2	20050329		
US 20050170098	A1	20050804	US 2005-59713	20050216
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PRIORITY APPLN. INFO.:				DE 2000-10016485 A
				20000401
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WO 2001-EP2790				W

200103
13<--
US 2003-239066 A3200301
16

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PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2001074739	ICM	C04B041-89
	ICS	C03C017-42
	IPCI	C04B0041-89 [ICM,7]; C03C0017-42 [ICS,7]
	IPCR	B08B0017-00 [I,C*]; B08B0017-06 [I,A]; C03C0017-00 [I,C*]; C03C0017-00 [I,A]; C03C0017-42 [I,C*]; C03C0017-42 [I,A]; C04B0041-45 [I,C*]; C04B0041-52 [I,A]; C04B0041-89 [I,C*]; C04B0041-89 [I,A]; C23C0024-00 [I,C*]; C23C0024-08 [I,A]; C23C0024-10 [I,A]; C23C0030-00 [I,C*]; C23C0030-00 [I,A]
	ECLA	B08B017/06; C03C017/00D4B; C03C017/42; C04B041/52; C04B041/89; C23C024/08; C23C024/10; C23C030/00
DE 10016485	IPCI	B05D0005-08 [ICM,7]; C03C0017-30 [ICS,7]; C03C0017-28 [ICS,7,C*]; C04B0041-49 [ICS,7]; C04B0041-45 [ICS,7,C*]; B05D0007-16 [ICS,7]
	IPCR	B08B0017-00 [I,C*]; B08B0017-06 [I,A]; C03C0017-00 [I,C*]; C03C0017-00 [I,A]; C03C0017-42 [I,C*]; C03C0017-42 [I,A]; C04B0041-45 [I,C*]; C04B0041-52 [I,A]; C04B0041-89 [I,C*]; C04B0041-89 [I,A]; C23C0024-00 [I,C*]; C23C0024-08 [I,A]; C23C0024-10 [I,A]; C23C0030-00 [I,C*]; C23C0030-00 [I,A]
	ECLA	B08B017/06; C03C017/00D4B; C03C017/42; C04B041/52; C04B041/89; C23C024/08; C23C024/10; C23C030/00
EP 1272442	IPCI	C04B0041-89 [ICM,7]; C03C0017-42 [ICS,7]
	IPCR	B08B0017-00 [I,C*]; B08B0017-06 [I,A]; C03C0017-00 [I,C*]; C03C0017-00 [I,A]; C03C0017-42 [I,C*]; C03C0017-42 [I,A]; C04B0041-45 [I,C*]; C04B0041-52 [I,A]; C04B0041-89 [I,C*]; C04B0041-89 [I,A]; C23C0024-00 [I,C*]; C23C0024-08 [I,A]; C23C0024-10 [I,A]; C23C0030-00 [I,C*]; C23C0030-00 [I,A]
	ECLA	B08B017/06; C03C017/00D4B; C03C017/42; C04B041/52; C04B041/89; C23C024/08; C23C024/10; C23C030/00
AT 308490	IPCI	C04B0041-89 [ICM,7]; C03C0017-42 [ICS,7]
	ECLA	B08B017/06; C03C017/00D4B; C03C017/42; C04B041/52; C04B041/89; C23C024/08; C23C024/10; C23C030/00
ES 2251478	IPCI	C04B0041-89 [ICS,4]; C03C0017-42 [ICS,4]
	IPCR	B08B0017-00 [I,C*]; B08B0017-06 [I,A]; C03C0017-00 [I,C*]; C03C0017-00 [I,A]; C03C0017-42 [I,C*]; C03C0017-42 [I,A]; C04B0041-45 [I,C*]; C04B0041-52 [I,A]; C04B0041-89 [I,C*]; C04B0041-89 [I,A];

C23C0024-00 [I,C*]; C23C0024-08 [I,A];
 C23C0024-10 [I,A]; C23C0030-00 [I,C*];
 C23C0030-00 [I,A]
 ECLA B08B017/06; C03C017/00D4B; C03C017/42;
 C04B041/52; C04B041/89; C23C024/08; C23C024/10;
 C23C030/00
 US 20030152780 IPCI B05D0003-02 [ICM,7]; B32B0017-06 [ICS,7]
 IPCR B08B0017-00 [I,C*]; B08B0017-06 [I,A];
 C03C0017-00 [I,C*]; C03C0017-00 [I,A];
 C03C0017-42 [I,C*]; C03C0017-42 [I,A];
 C04B0041-45 [I,C*]; C04B0041-52 [I,A];
 C04B0041-89 [I,C*]; C04B0041-89 [I,A];
 C23C0024-00 [I,C*]; C23C0024-08 [I,A];
 C23C0024-10 [I,A]; C23C0030-00 [I,C*];
 C23C0030-00 [I,A]
 NCL 428/429.000; 427/376.200; 428/447.000;
 428/142.000; 428/141.000; 428/156.000;
 428/432.000; 428/469.000
 ECLA B08B017/06; C03C017/00D4B; C03C017/42;
 C04B041/52; C04B041/89; C23C024/08; C23C024/10;
 C23C030/00
 US 20050170098 IPCI B05D0003-02 [ICM,7]
 IPCR B08B0017-00 [I,C*]; B08B0017-06 [I,A];
 C03C0017-00 [I,C*]; C03C0017-00 [I,A];
 C03C0017-42 [I,C*]; C03C0017-42 [I,A];
 C04B0041-45 [I,C*]; C04B0041-52 [I,A];
 C04B0041-89 [I,C*]; C04B0041-89 [I,A];
 C23C0024-00 [I,C*]; C23C0024-08 [I,A];
 C23C0024-10 [I,A]; C23C0030-00 [I,C*];
 C23C0030-00 [I,A]
 NCL 427/372.200; 427/402.000
 ECLA B08B017/06; C03C017/00D4B; C03C017/42;
 C04B041/52; C04B041/89; C23C024/08; C23C024/10;
 C23C030/00

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

ABSTRACT:

Glass, ceramic, or ~~metal~~ substrates having at least one self-cleaning surface comprise ≥ 1 partially hydrophobized layer with a micro raw surface structure disposed on said substrate. The layer contains a glass flux and structure-forming particles (SFP) having an average particle diameter of 0.1-50 μm ; a volume ratio of the glass flux and SFP is 0.1-5; and the micro raw surface structure has an average height/average distance of neighboring profile tips ratio of 0.3-10. The substrate is selected from glass, porcelain, clayware, clinker, and roofing bricks. The substrate is ~~coated~~ with a composition containing the glass frit and SFP, then, the layer is baked and hydrophobized with a fluoroalkyl-alkoxysilane or fluoroalkyl-alkoxysiloxane.

SUPPL. TERM: glass ceramic ~~metal~~ self cleaning
 surface hydrophobicity; porcelain clayware
 roofing brick zeolite silane ~~siloxane~~
 INDEX TERM: Zeolite ZSM-5
 ROLE: TEM (Technical or engineered material use); USES
 (Uses)
 (dealuminated, Wessalith DAZ, structure-forming particles; glass, ceramic, and ~~metal~~ substrates with a self-cleaning surface made of glass and hydrophobic film)
 INDEX TERM: Hydrophobicity
 (film; glass, ceramic, and ~~metal~~

substrates with a self-cleaning surface made of glass and hydrophobic film)

INDEX TERM: Frits
(glass, ceramic, and metal substrates with a self-cleaning surface made of glass and hydrophobic film)

INDEX TERM: Bricks
(roofing, self-cleaning coating of; glass, ceramic, and metal substrates with a self-cleaning surface made of glass and hydrophobic film)

INDEX TERM: Ceramics
Porcelain
Stoneware
(self-cleaning coating of; glass, ceramic, and metal substrates with a self-cleaning surface made of glass and hydrophobic film)

INDEX TERM: Clays, processes
Glass, processes
Metals, processes
ROLE: PEP (Physical, engineering or chemical process);
TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(self-cleaning coating of; glass, ceramic, and metal substrates with a self-cleaning surface made of glass and hydrophobic film)

INDEX TERM: Surface
(self-cleaning; glass, ceramic, and metal substrates with a self-cleaning surface made of glass and hydrophobic film)

INDEX TERM: 51851-37-7, Dynasylan F 8262
ROLE: TEM (Technical or engineered material use); USES (Uses)
(Dynasylan F 8262, hydrophobic agent; glass, ceramic, and metal substrates with a self-cleaning surface made of glass and hydrophobic film)

INDEX TERM: 365498-70-0, FK 27357
ROLE: TEM (Technical or engineered material use); USES (Uses)
(zircon pigment, structure-forming particles; glass, ceramic, and metal substrates with a self-cleaning surface made of glass and hydrophobic film)

OS.CITING REF COUNT: 8 THERE ARE 8 CAPLUS RECORDS THAT CITE THIS RECORD (8 CITINGS)

DATE LAST CITED: Date last citing reference entered STN: 28 Sep 2009

OS.CITING.REFS: CAPLUS 2009:1139590; 2009:737723; 2009:552749;
2007:145624; 2004:695250; 2004:349591;
2004:349590; 2002:487485

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD.

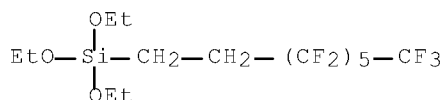
REFERENCE(S): (1) Matsushita Electric Ind Co Ltd; EP 0867490 A 1998
HCAPLUS
(2) Nippon Sheet Glass Co Ltd; EP 0887179 A 1998
HCAPLUS

IT 51851-37-7, Dynasylan F 8262
RL: TEM (Technical or engineered material use); USES (Uses)

(Dynasylan F 8262, hydrophobic agent; glass, ceramic, and
~~metal~~ substrates with a self-cleaning surface made of
 glass and hydrophobic film)

RN 51851-37-7 HCAPLUS

CN Silane, triethoxy(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl)-
 (CA INDEX NAME)



L42 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1997:186949 HCAPLUS Full-text

DOCUMENT NUMBER: 126:187461

ORIGINAL REFERENCE NO.: 126:36175a, 36178a

ENTRY DATE: Entered STN: 21 Mar 1997

TITLE: Water-repellent and frost-preventive
~~metal~~ objects and their manufacture

INVENTOR(S): Sakurai, Masanori; Yamaguchi, Hidetoshi

PATENT ASSIGNEE(S): Kobe Steel Ltd, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

INT. PATENT CLASSIF.:

MAIN: F28F013-18

SECONDARY: B05D007-14

CLASSIFICATION: 42-10 (Coatings, Inks, and Related Products)
 Section cross-reference(s): 56

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09026287	A	19970128	JP 1995-198083	19950710
			<--	
JP 3273877	B2	20020415		
PRIORITY APPLN. INFO.:			JP 1995-198083	19950710
			<--	

PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 09026287	ICM	F28F013-18
	ICS	B05D007-14
	IPCI	F28F0013-18 [ICM,6]; B05D0007-14 [ICS,6]
	IPCR	F28F0013-00 [I,C*]; F28F0013-18 [I,A]; B05D0007-14 [I,C*]; B05D0007-14 [I,A]; B32B0015-08 [I,C*]; B32B0015-08 [I,A]; B32B0015-082 [I,A]

ABSTRACT:

Title objects contain water-repellent ~~coating~~ films with partially or completely removal of non-polymeric materials and are prepared by forming water-repellent ~~coating~~ films on ~~metal~~

surfaces to a 1-100 mg/dm², contacting with adhesive objects having an adhesion of 5-500 g/cm, and removing the adhesive objects. An etched Al panel was ~~coated~~ with a C2F4 resin and baked to form a surface with water contact angle of 140°, which was changed to 158° with a frost prevention of >120 min after contacting with a tape having an adhesion of 245 g/cm and removing the tape.

SUPPL. TERM: oligomeric polymer removal water repellency
~~coating~~; frost prevention ~~coating~~
oligomeric polymer removal; tape removal oligomeric
polymer ~~coating~~ aluminum

INDEX TERM: Heat exchangers
(aluminum fins; water-repellent/frost-preventive
~~coatings~~ with the removal of non-polymeric
comps. for improvement)

INDEX TERM: Silanes
ROLE: PEP (Physical, engineering or chemical process);
TEM (Technical or engineered material use); PROC
(Process); USES (Uses)
(perfluoroalkyl;
water-repellent/frost-preventive ~~coatings~~
with the removal of non-polymeric comps. for
improvement)

INDEX TERM: Adhesive tapes
(water-repellent/frost-preventive ~~coatings~~
with the removal of non-polymeric comps. for
improvement)

INDEX TERM: Fluoropolymers, uses
Polysiloxanes, uses
ROLE: PEP (Physical, engineering or chemical process);
TEM (Technical or engineered material use); PROC
(Process); USES (Uses)
(water-repellent/frost-preventive ~~coatings~~
with the removal of non-polymeric comps. for
improvement)

INDEX TERM: Coating materials
(water-resistant; water-repellent/frost-preventive
~~coatings~~ with the removal of non-polymeric
comps. for improvement)

INDEX TERM: 7631-86-9, Silica, uses
ROLE: MOA (Modifier or additive use); USES (Uses)
(in fluoropolymer ~~coatings~~;
water-repellent/frost-preventive ~~coatings~~
with the removal of non-polymeric comps. for
improvement)

INDEX TERM: 7429-90-5, Aluminum, miscellaneous
ROLE: MSC (Miscellaneous)
(substrates; water-repellent/frost-preventive
~~coatings~~ with the removal of non-polymeric
comps. for improvement)

INDEX TERM: 116-14-3D, Tetrafluoroethylene, polymers 25038-71-5,
Ethylene-tetrafluoroethylene copolymer
ROLE: PEP (Physical, engineering or chemical process);
TEM (Technical or engineered material use); PROC
(Process); USES (Uses)
(water-repellent/frost-preventive ~~coatings~~
with the removal of non-polymeric comps. for

improvement)

L42 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1995:995090 HCAPLUS Full-text

DOCUMENT NUMBER: 124:90620

ORIGINAL REFERENCE NO.: 124:16938h,16939a

ENTRY DATE: Entered STN: 22 Dec 1995

TITLE: Reactive compounds for imparting water repellency and antisoiling properties to surfaces

INVENTOR(S): Yoneda, Takashige; Morimoto, Takeshi; Gunji, Fumiaki; Ishizeki, Kenji; Ono, Yukiko

PATENT ASSIGNEE(S): Asahi Glass Co. Ltd., Japan

SOURCE: Eur. Pat. Appl., 63 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

INT. PATENT CLASSIF.:

MAIN: C07F007-08

SECONDARY: C09K003-00; C03C017-00

CLASSIFICATION: 42-13 (Coatings, Inks, and Related Products)

Section cross-reference(s): 38

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 678521	A2	19951025	EP 1995-105864	19950419
EP 678521	A3	19990714		
R: BE, DE, FR, GB				
US 5576109	A	19961119	US 1995-425037	19950418
JP 08027456	A	19960130	JP 1995-93952	19950419
PRIORITY APPLN. INFO.:			JP 1994-81627	A 19940420
			JP 1994-97719	A 19940511

PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 678521	ICM	C07F007-08
	ICS	C09K003-00; C03C017-00
	IPCI	C07F0007-08 [ICM,6]; C07F0007-00 [ICM,6,C*]; C09K0003-00 [ICS,6]; C03C0017-00 [ICS,6]
	IPCR	B05D0007-00 [I,C*]; B05D0007-00 [I,A]; C03C0017-28 [I,C*]; C03C0017-30 [I,A]; C07F0007-00 [I,C*]; C07F0007-08 [I,A];

C08G0018-00 [I,C*]; C08G0018-77 [I,A];
 C09D0004-00 [I,C*]; C09D0004-00 [I,A]
 ECLA B05D007/00N2E; C03C017/30; C07F007/08D4H6F;
 C08G018/77N; C09D004/00+C08G77/04
 US 5576109 IPCI B32B0025-20 [ICM,6]; B32B0025-00 [ICM,6,C*]
 IPCR B05D0007-00 [I,C*]; B05D0007-00 [I,A];
 C03C0017-28 [I,C*]; C03C0017-30 [I,A];
 C07F0007-00 [I,C*]; C07F0007-08 [I,A];
 C08G0018-00 [I,C*]; C08G0018-77 [I,A];
 C09D0004-00 [I,C*]; C09D0004-00 [I,A]
 NCL 428/447.000; 528/033.000; 528/034.000;
 528/042.000
 ECLA B05D007/00N2E; C03C017/30; C07F007/08D4H6F;
 C08G018/77N; C09D004/00+C08G77/04
 JP 08027456 IPCI C09K0003-00 [ICM,6]; B01F0017-54 [ICS,6];
 C03C0017-30 [ICS,6]; C03C0017-28 [ICS,6,C*];
 C04B0041-84 [ICS,6]; C04B0041-82 [ICS,6,C*];
 C09D0183-04 [ICS,6]; C09K0003-18 [ICS,6];
 C07F0007-12 [ICA,6]; C07F0007-00 [ICA,6,C*]
 IPCR C04B0041-82 [I,C*]; C04B0041-84 [I,A];
 B01F0017-54 [I,C*]; B01F0017-54 [I,A];
 C03C0017-28 [I,C*]; C03C0017-30 [I,A];
 C07F0007-00 [I,C*]; C07F0007-12 [I,A];
 C09D0183-04 [I,C*]; C09D0183-04 [I,A];
 C09K0003-00 [I,C*]; C09K0003-00 [I,A];
 C09K0003-18 [I,C*]; C09K0003-18 [I,A]

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
 ABSTRACT:

Reactive compds. such as O(SiRX₂)₂, RSiX₂OSiX₃, RSiX₃, C₁₈H₃₇SiX₃, SiX₄, and (X₃SiCH₂)₂ (R = C₈F₁₇CH₂CH₂; X = isocyanato) are useful for treating glass, plastic, metal, and other surfaces to give durable surface layers with good water repellency and antisoiling properties.

SUPPL. TERM: fluoroalkyl isocyanato silane
 soilproofing waterproofing; siloxane
 fluoroalkyl isocyanato soilproofing waterproofing;
 glass soilproofing waterproofing fluoroalkyl
 isocyanato silane; plastic soilproofing
 waterproofing fluoroalkyl isocyanato
 silane; metal soilproofing
 waterproofing fluoroalkyl isocyanato
 silane; antifogging agent fluoroalkyl
 isocyanato silane

INDEX TERM: Silanes
 ROLE: MOA (Modifier or additive use); PRP
 (Properties); TEM (Technical or engineered material
 use); USES (Uses)
 (containing fluoroalkyl and isocyanato groups
 for imparting soil and water repellency to
 surfaces)

INDEX TERM: Windows
 Windshields
 (fluoroalkyl and isocyanato group-containing silanes
 for imparting soil and water repellency to)

INDEX TERM: Coating materials
 (fluoroalkyl and isocyanato group-containing silanes
 for soilproofing of surfaces)

INDEX TERM: Antifogging agents
 (fluoroalkyl and isocyanato group-containing silanes)

for treatment of surfaces)
INDEX TERM: Fluoropolymers
ROLE: IMF (Industrial manufacture); PRP (Properties);
TEM (Technical or engineered material use); PREP
(Preparation); USES (Uses)
(preparation from fluoroalkyl and isocyanato
group-containing silanes for soil- and waterproofing of
surfaces)
INDEX TERM: Soilproofing
Waterproofing
(agents, fluoroalkyl and isocyanato group-containing
silanes for reaction with surfaces)
INDEX TERM: Silanes
ROLE: MOA (Modifier or additive use); PRP
(Properties); TEM (Technical or engineered material
use); USES (Uses)
(alkoxy, containing fluoroalkyl and
isocyanato group-containing silanes for imparting soil
and water repellency to surfaces)
INDEX TERM: 9011-14-7, Polymethyl methacrylate
ROLE: MOA (Modifier or additive use); PRP
(Properties); TEM (Technical or engineered material
use); USES (Uses)
(powdered; in isocyanatosilanes for imparting water
repellency and antisoiling properties to surfaces)
INDEX TERM: 78-10-4, Tetraethoxysilane 3410-77-3,
Tetraisocyanatosilane 85314-80-3,
Triisocyanatooctadecylsilane 89860-22-0,
1,2-Tris(triisocyanatosilyl)ethane 137606-16-7,
Triisocyanato[2-(perfluorooctyl)ethyl]silane
164254-88-0 164254-89-1
ROLE: MOA (Modifier or additive use); PRP
(Properties); TEM (Technical or engineered material
use); USES (Uses)
(reactive agent for imparting water repellency and
antisoiling properties to surfaces)
OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD
(4 CITINGS)
DATE LAST CITED: Date last citing reference entered STN: 16 Feb 2009
OS.CITING.REFS: CAPLUS 2007:754766; 2000:401839; 2000:113019

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(FILE 'HOME' ENTERED AT 11:24:46 ON 21 MAR 2010)

FILE 'HCAPLUS' ENTERED AT 11:25:01 ON 21 MAR 2010

L1 1 SEA SPE=ON ABB=ON PLU=ON US20080063859/PN
D SCA
D IALL
SEL RN

FILE 'REGISTRY' ENTERED AT 11:26:37 ON 21 MAR 2010

L2 17 SEA SPE=ON ABB=ON PLU=ON (101947-16-4/BI OR 12597-68-1
/BI OR 12597-71-6/BI OR 12623-52-8/BI OR 16068-37-4/BI
OR 232586-88-8/BI OR 37264-44-1/BI OR 51851-37-7/BI OR
73768-94-2/BI OR 7429-90-5/BI OR 7440-02-0/BI OR
7440-22-4/BI OR 7440-47-3/BI OR 7440-50-8/BI OR 7440-57-5
/BI OR 7440-66-6/BI OR 9003-56-9/BI)
D SCA

FILE 'WPIX' ENTERED AT 11:27:35 ON 21 MAR 2010
L3 1 SEA SPE=ON ABB=ON PLU=ON US20080063859/PN
D IFULL

FILE 'REGISTRY' ENTERED AT 11:32:56 ON 21 MAR 2010
L4 1 SEA SPE=ON ABB=ON PLU=ON 16068-37-4/RN
D IDE

FILE 'HCAPLUS' ENTERED AT 11:41:20 ON 21 MAR 2010
L5 430 SEA SPE=ON ABB=ON PLU=ON L4
L6 455 SEA SPE=ON ABB=ON PLU=ON (BIS(3A)TRIETHOXYSILYL)(2A)ET
HANE OR ETHYLENEBIS(A)TRIETHOXYSILANE
L7 QUE SPE=ON ABB=ON PLU=ON COAT?
L8 198 SEA SPE=ON ABB=ON PLU=ON (L5 OR L6) AND L7

FILE 'REGISTRY' ENTERED AT 11:49:05 ON 21 MAR 2010
L9 2 SEA SPE=ON ABB=ON PLU=ON L2 AND (SI AND F)/ELS
D SCA
D IDE 1-2

FILE 'HCAPLUS' ENTERED AT 11:50:56 ON 21 MAR 2010
L10 674 SEA SPE=ON ABB=ON PLU=ON L9
L11 QUE SPE=ON ABB=ON PLU=ON FLUOROALKYLSILANE? OR
PERFLUOROALKYLSILANE? OR (((PERFLUORO OR FLUORO)(A)ALKYL)
OR PERFLUOROALKYL OR FLUOROALKYL)(2A)SILANE?
L12 8 SEA SPE=ON ABB=ON PLU=ON L8 AND L10
L13 1 SEA SPE=ON ABB=ON PLU=ON L8 AND L11
D KWIC
L14 QUE SPE=ON ABB=ON PLU=ON FLUOROSILANE? OR PERFLUOROSIL
ANE?
L15 1 SEA SPE=ON ABB=ON PLU=ON L8 AND L14
D KWIC
L16 10 SEA SPE=ON ABB=ON PLU=ON L12 OR L13 OR L15

FILE 'WPIX' ENTERED AT 12:01:33 ON 21 MAR 2010
L17 966 SEA SPE=ON ABB=ON PLU=ON L11 OR L14
L18 86 SEA SPE=ON ABB=ON PLU=ON (BIS(3A)TRIETHOXYSILYL)(2A)ET
HANE OR ETHYLENEBIS(A)TRIETHOXYSILANE OR BISTRIETHOXYSILY
LETHANE OR ETHYLENEBISTRIETHOXYSILANE
L19 1 SEA SPE=ON ABB=ON PLU=ON L17 AND L18
L20 1491 SEA SPE=ON ABB=ON PLU=ON C09D0183-08/IPC
L21 76 SEA SPE=ON ABB=ON PLU=ON L20 AND L17
L22 3 SEA SPE=ON ABB=ON PLU=ON L20 AND L18
L23 68 SEA SPE=ON ABB=ON PLU=ON L21 AND L7
L24 2 SEA SPE=ON ABB=ON PLU=ON L22 AND L7
L25 QUE SPE=ON ABB=ON PLU=ON METAL?
L26 35 SEA SPE=ON ABB=ON PLU=ON L23 AND L25
L27 QUE SPE=ON ABB=ON PLU=ON ?SILOXANE?
L28 14 SEA SPE=ON ABB=ON PLU=ON L26 AND L27
L29 12 SEA SPE=ON ABB=ON PLU=ON (L19 OR L22 OR L24 OR L28)
AND (PY<=2003 OR PRY<=2003 OR AY<=2003)

FILE 'HCAPLUS' ENTERED AT 12:37:15 ON 21 MAR 2010
L30 58 SEA SPE=ON ABB=ON PLU=ON L8 AND L25
L31 15 SEA SPE=ON ABB=ON PLU=ON L30 AND L27
L32 987 SEA SPE=ON ABB=ON PLU=ON (L10 OR L11) AND L7
L33 220 SEA SPE=ON ABB=ON PLU=ON L32 AND L25
L34 83 SEA SPE=ON ABB=ON PLU=ON L33 AND L27
L35 QUE SPE=ON ABB=ON PLU=ON L25(3A)SURFAC?
L36 13 SEA SPE=ON ABB=ON PLU=ON L34 AND L35

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L37 17 SEA SPE=ON ABB=ON PLU=ON (L16 OR L31 OR L36) AND
 (PY<=2003 OR PRY<=2003 OR AY<=2003)

FILE 'WPIX' ENTERED AT 12:42:50 ON 21 MAR 2010
SEL L29 PN,AP

FILE 'HCAPLUS' ENTERED AT 12:42:59 ON 21 MAR 2010
L38 22 SEA SPE=ON ABB=ON PLU=ON (WO2000-GB350/AP OR EP1997-11

L39 16 SEA SPE=ON ABB=ON PLU=ON L37 NOT L38
L40 6 SEA SPE=ON ABB=ON PLU=ON L16 AND L39
L41 5 SEA SPE=ON ABB=ON PLU=ON (L31 AND L39) NOT L40
L42 5 SEA SPE=ON ABB=ON PLU=ON (L36 AND L39) NOT (L40 OR
 L41)

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